

PROJECT EVALUATION SUMMARY (PES) - PART I

CLASSIFICATION

Report Syn. J-447

1. PROJECT TITLE Zanzibar Malaria Control			2. PROJECT NUMBER 621-0163	3. MISSION/AID/W OFFICE USAID/Tanzania
4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) 84-2			<input checked="" type="checkbox"/> REGULAR EVALUATION <input type="checkbox"/> SPECIAL EVALUATION	
5. KEY PROJECT IMPLEMENTATION DATES A. First PRO-AG or Equivalent FY <u>81</u> B. Final Obligation Expected FY <u>81</u> C. Final Input Delivery FY <u>87</u>			6. ESTIMATED PROJECT FUNDING A. Total: \$ <u>16,030,000</u> B. U.S. \$ <u>11,770,000</u>	
7. PERIOD COVERED BY EVALUATION From (month/yr.) <u>September 1981</u> To (month/yr.) <u>October 1983</u> Date of Evaluation Review: <u>November 25, 1983</u>				

8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., airmgram, SPAR, PIO, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
1. A Project Paper Amendment is to be prepared showing revised project inputs/outputs, end of project status and implementation plan,	James Dempsey Janet Schulman Joseph W. Jacobs	June, 1984
2. Future procurement schedule should be based on a GOZ approved Plan of Operation and yearly workplan. The team recommended that no further major procurement of insecticides or drugs be made unless such plans are available and have a favorable USAID review. Present commodity orders are not included in this recommendation.	GOZ Robert Turner	January, 1984
3. USAID/Tanzania should make determined efforts to obtain from WHO and other external assistance services, specialized consultants for the program. These are to be written requests of the GOZ/MCP.	Joseph W. Jacobs GOZ	Effective immediately and ongoing.
4. Copies of major malaria control documentation, such as annual reports and major workplans from GOZ/MCP, should be sent by USAID/Tanzania to AFR/TR, and if desired, to ST/H in order to keep concerned AID/W offices more up to date on project progress.	Joseph W. Jacobs	Effective immediately and ongoing.
5. A stock control card system should be instituted immediately for all project commodity activities. This will cover insecticides, sprayers, larviciding equipment and vehicle parts etc.	GOZ Robert Turner	March, 1984

9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS

<input checked="" type="checkbox"/> Project Paper	<input checked="" type="checkbox"/> Implementation Plan e.g., CPI Network	<input type="checkbox"/> Other (Specify) _____
<input checked="" type="checkbox"/> Financial Plan	<input type="checkbox"/> PIO/T	_____
<input checked="" type="checkbox"/> Logical Framework	<input checked="" type="checkbox"/> PIO/C	<input type="checkbox"/> Other (Specify) _____
<input checked="" type="checkbox"/> Project Agreement	<input type="checkbox"/> PIO/P	_____

10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT

A. <input type="checkbox"/> Continue Project Without Change
B. <input checked="" type="checkbox"/> Change Project Design and/or
<input checked="" type="checkbox"/> Change Implementation Plan
C. <input type="checkbox"/> Discontinue Project

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)

Joseph W. Jacobs - Project Officer
 Dr. Juma Muchi - Project Director
 Robert Turner - Contract Malariaologist
 Janet Schulman - Project Development Officer
 Larry Cowper - Health Science Administrator ST/H

12. Mission/AID/W Office Director Approval:

Signature: _____
 Typed Name: **Frederick Gilbert**
 Date: _____

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REPORT OF THE
EVALUATION OF THE USAID
ZANZIBAR MALARIA CONTROL PROJECT
November 3 - November 23, 1983

November 23, 1983

U.S.A.I.D. /TANZANIA

U.S.A.I.D. ZANZIBAR MALARIA CONTROL PROJECT

PROGRAM EVALUATION REPORT

November 3-23, 1982

EXECUTIVE SUMMARY

I. INTRODUCTION:

At the request of USAID/Tanzania (USAID/T) and with the concurrence of the Government of Zanzibar (GOZ), a Team of health, malaria and project development specialists was organized to review the USAID/T Malaria Control Project in Zanzibar. The general purposes of this Team were to (1) review the present activities of the Zanzibar Malaria Control Program (MCP); (2) evaluate the status of the USAID Malaria Control Project and (3) provide a report on its findings and recommendations. The evaluation was held from November 3-23, 1983 and included Island-wide field visits on Unguja and Pemba as well as in-depth reviews of epidemiological, entomological, spray operations, laboratory services, administration, health education and public health data and documentation at national, regional and district levels. The Team operated under a jointly approved GOZ/AID Terms of Reference to direct its work.

II. PRESENT STATUS OF THE MALARIA PROGRAM:

Malaria continues to be a major disease problem on Zanzibar affecting the economic and social well-being of its approximately 550,000 citizens. The leading cause of admission to hospitals in 1981 and 1982 was malaria. In reviewing records at Health Centers and other health institutions, malaria represented 20-25% of all cases treated. As the major species of malaria found on Zanzibar is P.falciparum, the disease is considered a leading cause of death either directly or through its

secondary effects.

The Malaria Control Program (MCP) is now in the process of developing its organization and planning its operational activities to reduce the impact of this disease on the Zanzibar population. The MCP has moved into new headquarters offices, initiated field training for its field staff and has ordered a variety of supplies and equipment including insecticides, vehicles, anti-malaria drugs and, laboratory supplies from USAID Project fundings. The MCP is actively engaged in developing a long-term Plan of Operations and a 1984 workplan to guide its activities. The GOZ has provided an increase in funding to the MCP to develop its core staff, hire temporary workers, procure needed field and office equipment to support its operation. The FY 1983/84 GOZ budget is T.Shs.8,400,000 which represents an increase of T.Shs.1,400,000 over the FY 1982/83 budget allotment. Plans are being made for an operational spray program in March 1984, initiating entomological and parasitological activities, health education and training efforts and strengthening its management system. The present total MCP staff is 205, including 55 temporary workers. The staff levels are expected to increase in 1984 to 564, including 400 ACD and spray personnel.

III. EVALUATION OF THE USAID PROJECT

The USAID Malaria Control Project is approximately two years behind schedule as outlined in the approved Project Paper. The USAID Technical Advisor arrived in May, 1983 and is now providing assistance to the Project. Major insecticide commodities have been ordered, but their timely arrival

for the March spray operation is uncertain. Vehicles have arrived and are in use in preparing MCP activities. There has been limited short term consultant assistance to provide help on various aspects of the program. Some training has been provided including long-term support of a master's degree program. Additional training funds have supported an observation tour in Sudan and participation in an international conference. The Implementation Plan, End-of-Project outputs and many program targets of the project are now out-dated and need revision.

IV. SUMMARY OF MAJOR RECOMMENDATIONS AND SUGGESTIONS:

4.1. The Team recommends to USAID/Tanzania the following actions be taken in regards to the USAID Project;

- A. Joint GOZ/AID development of a long-term Plan of Operations and 1984 Work Plans for the MCP.
- B. Revision of the present USAID/T Project to provide program objectives, targets and outputs which are in accord with the technical and operational developments which have accrued since the project's approval in September, 1981.

4.2. The Team suggested a variety of actions for consideration by the MCP which include :

- A. Proper malaria treatment methodology should be standardized and followed by all health institutions.
 - B. Operational efforts in the residual spray, larviciding and ULV programs are to be based on carefully detailed workplans which include training, supervision, evaluation. It was felt that the residual spray operation should be carried out in March/April each year with an insecticide proven to be effective.
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- C. Increasing health education efforts at the Community level through a variety of techniques.
- D. Establishing an effective training program for both permanent and temporary personnel.
- E. Developing ^{and} /enforcing management systems for fiscal control, supplies and equipment and vehicles mechanisms through sound, well-conceived administrative controls.
- F. Eliminating for approximately two years the ACD collection of blood slides and to focus on case treatment. Periodic malarimetric surveys will provide the necessary epidemiological evaluation .
- G. Provision of a long-term Plan Of Operation and yearly workplans.
- H. Coordination with the MOH in the development of a Primary Health Care (PHC) system.

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USAID ZANZIBAR MALARIA CONTROL PROJECT

PROGRAM EVALUATION

NOVEMBER 3 - 23 1983

1. INTRODUCTION:

1.1. Purpose of the Evaluation

The Project Paper (PP) for the Zanzibar Malaria Control Project (621-0163) scheduled three program evaluations. The first evaluation was scheduled for June 1983 but was delayed until September 1983 in order to allow the USAID Technical Advisor an opportunity to begin his work assignment. This project was authorized on September, 30th 1981 for a total of \$11,771,000 in loan funds. The project completion date (PACD) is September 30th , 1987.

The stated purpose of the evaluation is to evaluate project progress and to suggest elements of project re-design so as to insure that the project achieves its original aims, if these aims are still valid. The USAID/Tanzania during its briefings to the AID members of the Evaluation Team on November 4th, 1983 in Dar es Salaam specifically requested that the approved project implementation plan be reviewed carefully and recommendations provided in the Team's report on possible redesign suggestions. It is planned that a project amendment will be prepared following the evaluation in order to make corrective changes in the project's design.

The timing of this evaluation is considered significant as the disease is continuing to be a priority health problem in Zanzibar. Also of concern is the continuing and

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increasing evidence the P. falciparum species of malaria is developing a higher level of resistance to chloroquine, the anti-malarial used in most malaria program world-wide.

The Evaluation Team has been asked to look at many complex factors regarding malaria in Zanzibar. The Team has received a number of previous reports made on malaria activities in the past. A list of the major source references are provided in the annex. The basic geographic, historical and climatological data for Zanzibar is found in these and other documents and is not repeated in this report. (See Annex 1.) It is hoped that the findings and recommendations of the Team will have immediate short term applications in the conduct of the USAID Zanzibar Malaria Control Project as well as contributing to the long term objectives of the national program.

1.2. Evaluation Team Members

Government of Zanzibar

1. Dr. Mahmoud Idi Hassan - Assistant Minister of Health
2. Dr. Juma Muchi - Director, Zanzibar Malaria Control Program (MCP)
3. Hamad Juma Haji- Entomologist, Zanzibar MCP
4. Robert L. Turner - Malaria Advisor

Agency for International Development (AID)

1. Larry Cowper - Health Science Administrator
(Team Leader), Office of Health,
Science and Technology Bureau, AID/W
2. Dr. Augusto Noguer - Malaricologist (Consultant)
3. Joseph Jacobs - Public Health Advisor, USAID/T
4. Janet Schulman - Project Development Officer, USAID/T

Centers for Disease Control (CDC)

1. Dr. Ira Schwartz - Epidemiologist, Malaria Branch

1.3. Terms of Reference

- 1.3.1. Review progress of malaria activities with appropriate staff.
- 1.3.2. Review epidemiological data, including results of recent chloroquine sensitivity studies and vector susceptibility tests.

- 1.3.3. Visit urban and rural health centers on Unguja and Pemba to observe aspects of health care accessibility and health care delivery, including passive case detection capabilities.
- 1.3.4. Observe active case detection activities.
- 1.3.5. Review and discuss administrative organization including supply, logistics, property control, purchasing, vehicle operation and maintenance, and aspects of personnel management.
- 1.3.6. Review plans for field operations, including intra domiciliary spraying, larval control, source reduction, and safety measures.
- 1.3.7. Review health education aspects.
- 1.3.8. Review procurement procedures, timing, and sources for commodities to be procured.
- 1.3.9. Review of existing project design, as given in project paper, and in view of project implementation and progress to date, make recommendations on redesign of project. These recommendations need to be in sufficient detail to allow relative ease in planned subsequent preparation of project paper amendment.

1.3.10. Preparation of evaluation paper, including details of redesign recommendations, prior to departure of Evaluation Team from Tanzania.

1.3.11. Other reviews, studies, and discussions deemed appropriate for evaluation and redesign considerations.

1.4. Field Visit Description

Field trips arranged for ^{the} Evaluation Team included areas in both Pemba and Unguja. Site visits were made to the Island Malaria Offices on the two Islands and discussions held with the malaria staff on the various aspects of the program. Specific attention during the field visits was given to hospitals, health centers and other medical institutions to learn of their anti-malaria activities. On Unguja, The Team visited the three Regions - North, West and South. Contacts were made with Party Officials as well as Governmental leaders. Visits were made to a sugar factory and a tractor shop to discuss the economic impact of malaria.

Team members Haji, Jacobs, and Schwartz visited Pemba between November 10-12. Visits to the North and Central Regions of Pemba were conducted by the Chief Island Officer, Mr. Abdullah Said Ali. Meetings with government and party officials were also held, and hospital and rural health facilities were observed.

II. Present Status of Malaria in Zanzibar

2.1. Background

Zanzibar is comprised of 2 small Islands, Unguja and Pemba, located in the Indian Ocean approximately 25 miles off the North-Eastern coast of Africa, between 5° and 7° S. latitudes. In 1964, the Islands joined the mainland nation of Tanganyika to form the United Republic of Tanzania. The total land mass is 2332 square kilometers, and the most recent demographic data are:

	<u>Estimated Population</u>	<u>% of Population Below 15</u>	<u>15- 64</u>	<u>(Age in Years) 65+</u>
Unguja	310,000	45.9	49.4	4.6
Pemba	<u>223,000</u>	<u>52.1</u>	<u>43.7</u>	<u>4.2</u>
Total	553,000	48.6	47.0	4.4

(Source: Statistical Abstract, Department of Statistics, Ministry of State (Planning), June, 1982)

There are 2 rainy seasons the long rains from April to June and the short ^{rains} from mid-October to December.

As in much of sub-Saharan Africa, the hot and humid tropical climate and changing political and economic conditions, have contributed to the difficulties in reducing malaria and other vector-borne diseases from their prominent places in disease-related morbidity and mortality.

Descriptive epidemiology of malaria prevalence and vector distribution was begun in the early decades of this century. It was not until 1958, with the launching of the

GOZ/WHO/UNICEF Malaria Control Program, that a full-scale coordinated effort at disease reduction occurred.

Consistent with prevailing public health policy at that time, the program was upgraded to an eradication program in 1961.

Despite impressive reductions in malaria incidence, the program never achieved complete interruption of disease transmission. The program was terminated for political and economic reasons in 1968.

Since that time, malaria has once again risen to a level of high endemicity. A GOZ Malaria Control Program was re-established in 1972, but lack of resources limited the ability to plan and implement both vector control and drug treatment programs.

Several studies in the recent past document point prevalences, vector identification and susceptibilities, and drug sensitivity, prior to the commencement of work on the current project. A list of major resource references is given in Annex 1 .

2.2. General Epidemiology and Current Surveillance Activities

2.2.1. Morbidity and Mortality of Malaria

Since only very limited anti-vectorial measures have been carried out in recent years, the malaria impact and case-load on the population is roughly the same as two years ago.

As may be seen from Annexes 3 A, 3 B, 3 C and 3 D, malaria was the leading cause of admission to hospitals in Zanzibar in 1981 and 1982. It was second only to measles in both years as the leading cause of death among in-patients in hospitals.

It should be pointed out that in 1982, malaria, diarrhoea, measles, acute respiratory infections and malnutrition problems accounted for 65.5% of all the admitted patients in the country's hospitals, and that those five groups of diseases were the cause of 74.8% of all deaths among in-patients. An increased effort for improving the control of these diseases would drastically change the country's pattern of morbidity and mortality.

In-patient malaria case fatality rates in Zanzibar hospitals are shown in Annex 3 E. The case fatality rate of 7.2% in children admitted to hospital is unexpectedly high. One possible explanation for this may be that many children with malaria arrive at a hospital in such poor health that even proper supportive treatment may fail due to overwhelming parasitemia. Such high case fatality rates in hospitals leads to speculation at the magnitude of malaria-specific case fatality rates among ill children in rural areas, who live without means

for rapid transport to hospitals facilities. Annex 3 F shows the importance of malaria as a leading cause of morbidity among patients attending out-patient clinics in the country during the first two quarters of 1983. On Unguja Island, more than 21% of all presenting patients were clinically diagnosed as malaria; during the 2nd quarter (at the time of year malaria transmission would be expected to be on the increase), the incidence of clinical malaria was over 23%. On Pemba, the same rates were over 18%, and 23%, for the respective quarters. It should be noted that there were important seasonal variations in the two Northern Districts of Unguja; the almost constant attendance rates during 1st and 2nd quarters in the Central District; and that the highest rate occurred during the second quarter of 1983 in the Mkoani District on Pemba Island. By age groups, rates among the 0-4 year-olds was below those of the 5-14 years olds and adults in Zanzibar; the reverse was observed in Pemba, particularly during the 2nd quarter. It appears that transmission was higher on Pemba during that quarter.

2.2. 2. Malaria Transmission

There is no malarimetric data available that would allow accurate assessment of the seasonal variations in malaria transmission. However, the monthly blood positivity rates among out-patients in Zanzibar Town do correspond with previously available information, and tend to confirm that transmission indices remain fairly similar to those available from the past. Graph I, plotted from positivity rates extracted from Annex 3 G, shows that slide positivity rates started to rise in May, which probably reflects the increase in April of mosquito densities. These disease rates

reach a peak in July among children and adults, but occur earlier in June among infants, which may reflect that transmission is maximal in May/June.

There is a second (lower) peak of slide positivity in December, resulting from the November rains (and resultant increase in transmission) which is followed by a tapering of positivity by April. These data for 1982 confirm previous conclusions that any residual insecticide spraying should be completed by end of March or 2nd week of April and that two to three months of residual insecticide activity may have a profound impact on transmission rates. A second round of spraying, covering the November peak, may not be necessary in this control program (i.e. a program that is not aiming for the total interruption of transmission) if the malaria-related morbidity has been reduced to levels which permit aggressive case-finding and appropriate treatment.

In view of the operational and epidemiological importance of the population of Zanzibar Town (which accounts for over 41% of Unguja Island's total population), an attempt has been made to assess the gravity of the malaria problem among this urban community.

From records available for September 1983, a time when malaria incidence on the Island should be quite low, blood slide positivity rates among persons attending the out-patient clinic at V.I. Lenin Hospital were completed (Annex 3 H). The total blood slide positivity rate during that month for all age groups was 43.7% which is rather high. In Annex 3I, an attempt was made from a limited sample of out-patients coming to the V.I. Lenin Hospital, to determine from where they were coming. It was found that over

87% of those patients who utilize the out-patients services, lived in the urban and peri-urban areas of Zanzibar Town, while a minority came from rural districts. Approximately one-third of those persons from the urban areas had positive blood slides, while a mean of 58.3% of fever cases from rural areas were determined to be positive. Therefore, morbidity due to malaria in Zanzibar Town is quite important. Malaria control measures in urban zones should be a high priority of the MCP activities.

2.2. 3. Malariometric Surveys

From June to August 1983, mass blood surveys were carried out in selected localities of the Southern and Northern Regions of Unguja. Although there is undoubtedly some bias in the sample selection, the number of slides collected in all age groups permits some valuable conclusions to be drawn concerning the level of malaria transmission and malaria prevalence at a time when positivity rates would be expected to be high. Infant parasite rates of 64.7%, 50.0%, 67.7% and 65.5% in Central, Southern, North A and North B Regions respectively, indicates very intense transmission during the 1983 rainy season (Annex 3J). Parasite rates (P.R.) in the age group 2-9 years old are over 50% in all surveyed localities but one (Bwejuu in Southern District of the South Region, P.R. 29.7), with a maximum of 89.3% in Banda Maji: (North A). Adult parasite rates are also very high, varying from 61.0% (Mangachwani, North B) to a low of 25.9% (Bwejuu), and indicate a large malaria reservoir. The results of these surveys point to a level of hyperendemicity in Unguja Island, nearing holoendemicity. They also indicate some areas of lower endemicity in the Southern Region of Unguja.

It is unfortunate that no similar surveys have been conducted on Pemba Island.

At the time of the Project Evaluation (November 1983), spleen surveys were carried out in two primary schools in each of the three regions of Unguja Island.

Results of these surveys, shown in Annex 3K, indicate that at the time of the year when the malaria load is expected to be at its lowest level, the amount of residual malaria among children 5-9 years old was still quite high in the West and North Regions. In the South, Spleen Rates (S.R.) and the Average Enlarged Spleen Index (A.E.S.) were not as high, particularly in Bwejuu locality, a quite large village facing the Indian Ocean with central water supply facilities. Both of these factors reduce the potential for vector breeding in Bwejuu. Informal questioning of school teachers in the area confirmed that mosquitoes were not a serious problem in the village, and that the school drew children far from the sea, which may explain the 23.1% S.R. and 1.7 A.E.S.

All the above figures and observations tend to indicate that more than 50% of the population is infected with malaria in most of Unguja Island throughout the year. Therefore, for the purposes of case detection, the number of blood slides that would have to be collected (from suspected malaria cases) would be so enormous that the malaria program laboratories would be overloaded with literally thousands of slides awaiting examination.

It thus seems logical at this point in time to stop routine slide collection from suspected malaria cases until such time that the prevalence of

malaria is low enough to permit easy laboratory handling of the incoming slides. In fact, during the years of malaria eradication programs, a slide parasite rate of 3% was found to be an appropriate benchmark for ACD Operations.

On the other hand, it is imperative the MCP develops a reliable system for epidemiological evaluation that would permit assessing the programs' progress. Blood malarimetric surveys, twice a year, on statistically-significant samples, would serve as an excellent source of information. Assessment of clinical morbidity rates among out-and in-patients would also help in encouraging and measuring the other health services participation in malaria control.

2.2. 4. Case Detection Activities - Unguja

As of November 1, 1983, the Malaria Agents (who were formerly collecting blood slides among suspected malaria patients attending dispensaries and clinics throughout the country) were assigned to "Active Case Detection" activities, including registration of households and inhabitants in their zones of work, blood slide collection from suspected malaria cases at the time of their house visit, and case treatment with chloroquine (25 mg/kg body weight) of suspected cases. Agents are instructed to treat all cases without awaiting slide examination results.

During their visits to the field in Unguja Island, members of the Evaluation Team met nine of these Malaria Agents. They have an average of ten years experience in the malaria service, all had uniforms, were properly equipped with blood-taking materials including pricking needles, and all reported having attended a refresher seminar on ACD techniques in July 1983. The quality of slides taken was in general satisfactory, except in the West Region, where the three agents met had blood films of rather poor quality. (see Annex 3.L).

As mentioned previously, the 3 day treatment with chloroquine (25 mg/kg body weight) is the standard regime advocated in the country, and is the official policy of the MCP. However, although the majority of the Agents followed this pattern, two of them in the West were administering 12 tablets (150 mgr. chloroquine base) per adult and one in the North was only giving 8 tablets.

The Evaluation Team expressed strong doubts about the value of blood slides taken from people who will be fully treated with a radical dose of chloroquine, prior to the examination of the slide. The only value of such blood-taking seems to be the assessment of the accuracy of the clinical diagnoses made by the malaria agents since it neither prompts further treatment nor is it an accurate measurement of the amount of malaria in the population.

The Evaluation Team was also able to visit nine health centres during their field visits. Health Center officers answered our inquiries, and the Team received valuable information from them. It appears from Annex 3M that clinically-diagnosed cases of malaria are a sizable part of all patients attending these clinics. the reported

From the daily registers, malaria case load varied from a low of 12.9% (Mkokotoni) to a high 62.5% in Kilimani (Zanzibar periurban apartment blocks area). Supplies of antimalarial drugs to these Centers seem regular and sufficient, but some refresher training and standard instructions on case treatment should be issued, since in only one center was the standard 10 tablets (1500 mg. chloroquine base) treatment followed. Mention should be made of the fact that inappropriate treatment regimens varied from a total of 8 tablets (under-dosage), to a total of 16 tablets (over dosage).

2.2. 5. MCP Surveillance Activities - Pemba

Due to the exigencies of time and transport, the Evaluation Team visited only 3 rural health dispensaries in the Northern Region of Pemba. No Malaria Agents were present; only 1 Hospital Assistant was at his post at the time of Team's visit.

Wingwi/Micheweni District

Mr. Abdullah Salim, Hospital Assistant at Wingwi for 2 years, staffs this dispensary, with the help of 2 Nurse-Midwives. He estimated that his facility serves 8-12,000 people.

Examination of his daily log showed that over the last 10 days, he treated between 12-40 persons/day; approximately 40% were diagnosed as either malaria or pyrexia of unknown origin and were treated with chloroquine.

Chloroquine phosphate tablets, 250 mg. (Richlyn Labs, U.S.A.) were in stock, as well as several 5ml. ampoules of parenteral chloroquine (no dosage shown). Questioning, as well as inspection of records, indicated that adults were routinely treated by the following schedule: 3 tablets immediately, 2 tabs. in 6 hours, then 2 tablets daily for 2 days for a total of 1,350 mg. chloroquine base. Children were noted to be given smaller doses, though no written regimen was available, nor was chloroquine syrup available. Drugs are supplied directly from the hospital stores in Wete, usually on a monthly basis when a dispensary employee has occasion to go to town. There have been no recent shortages, except for a 2-week period in August 1983 when the hospital stores were reported empty.

The dispensary is rationed to 10 ampoules of parenteral chloroquine each month. This drug is reserved for "severe" cases, especially if vomiting is a presenting symptom. Rarely do individuals with life-threatening severe illness (coma, convulsions) come to the dispensary. It is believed that their families take such patients directly to the hospital at Wete.

Micheweni/Micheweni District

Permanent staff were not available to meet with the Evaluation Team at this dispensary. Examination of the Center's record book showed a daily attendance of 20-40 people with approximately 50% of these patients treated with chloroquine. Chloroquine Phosphate, 250 mg. tablets, were available as were several ampoules of parenteral chloroquine. There was no notation of the regimen used to treat patients at the Center.

Coincidentally, a man who worked as a sprayman under the old malaria eradication program was at the dispensary. He has been erratically employed by the new MCP for larviciding. We were shown an empty tin of Dursban and a Hudson sprayer (in apparent working order) used for application of larvicide to latrines. He reported not having larvicided for at least 6 months.

Kiungoni/Wete District

Two Nurse Mid-wives were the only staff available at this dispensary. Examination of the record book showed a daily attendance of 25-40 people with approximately 50% treated with chloroquine. Chloroquine

tablets were available, as were ampoules of parenteral chloroquine, and several liters of different brands of chloroquine syrup from Denmark, West Germany, and China. The written records showed that adults were usually treated by the following regimen: 3 tablets immediately, 1 1/2 tabs in 8 hours, then 1 1/2 tabs daily x 2 days, for a total of 1,125 mg chloroquine base. It was impossible to determine what the standard dose of chloroquine was provided to children.

2.2.6. EPIDEMIOLOGY OF DRUG RESISTANCE

Chloroquine resistant strains of Plasmodium falciparum were first recognized in East Africa in 1978, when infections with such parasites were described in non-immune travelers from Kenya and mainland Tanzania. At that time, both the prevalence and grade of chloroquine resistance was thought to be low.

Since then, the spectrum of chloroquine - resistance in Africa has expanded greatly. As of late 1983, the WHO recognizes the transmission of chloroquine-resistant P. falciparum in Kenya, Tanzania, Uganda, Burundi, Comoros, Madagascar, and certain areas in Zambia and Sudan. Other contiguous countries may be affected as well.

Drug susceptibility may be measured either by an individual infection's response to a therapeutic dose of drug (in-vivo response), or by laboratory- based methods that determine a drug's ability to inhibit growth of a specific parasite isolate (in-vitro testing). The WHO recognizes certain criteria which classify the possible responses of a parasitemic individual to a dose of drug. These responses range from sensitive(s) to highly resistant (R3), with gradations of resistance in between these levels.

Given the growing uneasiness about the changes in drug susceptibility patterns in neighboring East Africa, the MCP expeditiously addressed this issue following project authorization. Accordingly, a team of consultants from CDC and WHO carried out an assessment of the susceptibility of P. falciparum to chloroquine and amodiaquine in Zanzibar Town during July-August 1982 (Annex 1). In summary, it was found that single-dose therapy with either drug was clearly

unacceptable, and that almost one third (11/32) of infected individuals failed to be cured with the standard 25 mg/kg. therapeutic course of chloroquine. Treatment with an equivalent dose of amodiaquine was somewhat more effective (4/38 failures).

The consultants' recommendations were that single-dose therapy, or weekly prophylaxis with chloroquine or amodiaquine, would be unlikely to have a positive effect in reducing malaria-related morbidity and mortality. Such sub-therapeutic doses would in all likelihood increase the prevalence of drug-resistant strains. It was suggested that the MCP coordinate its efforts with the MOH to ensure that all cases of malaria or unexplained fever be treated with a full therapeutic course of drugs. It was further recommended in this report that the MCP procure a supply of an alternative antimalarial for life-threatening infections or those that do not respond to chloroquine, but that its use be restricted to only such cases. Finally, collection of baseline data and active surveillance for drug-resistance was recommended for other areas of Zanzibar.

The Evaluation Team was pleased to find that some action had been taken on these recommendations. The problem of inconsistency of chloroquine dosage at rural health posts has been discussed elsewhere, but at least it is now official MCP policy that all cases be treated with the standard WHO therapeutic 3-day regimen (Annex 3 N).

The Team was further gratified to see that the skills acquired by MCP personnel during the previous CDC/WHO consultancy had been used. During August 1983, a MCP team went to Makunduchi (South District, Unguja) where

they performed the WHO Standard in-vivo Field Test for chloroquine, 25 mg/kg, in 162 children (Annex 3 P). The procedures followed were exact and correct. Unfortunately, the results indicate a high prevalence of chloroquine-resistance in that area, with 101 (63%) children showing responses at the R2 or R3 level.

These data indicate that chloroquine-resistance is not confined to Zanzibar Town, and should prompt similar assessments elsewhere on Unguja and on Pemba. They should also reinforce the urgency of ensuring that all health personnel responsible for treating malaria: a) dispense the correct and full amount of chloroquine; (b) teach patients how and why to take the doses of drug; and (c) alert health posts that chloroquine may not always be curative, and to provide alternative drug(s) to selected facilities.

Use of Anti-malarials

Despite the demonstrated relatively high prevalence of chloroquine-resistance, the MCP has elected to continue using the drug as its mainstay antimalarial. Their arguments to the Evaluation Team include the availability of the drug on the open market, the fact that the local pharmaceutical plant is currently manufacturing chloroquine phosphate tablets, the relative expense of any alternative antimalarial, and the impact on the public's confidence in their health professionals, should chloroquine be abandoned.

Numerous discussions with the Director of the MCP and his associates, as well as a formal meeting on 12 November at the V.I. Lenin Hospital with Dr. Athnas Swaly, Hospital Superintendant, and members of the hospital's medical staff, brought out the following points regarding

the use of antimalarials:

1). From a clinical viewpoint, chloroquine-resistance is not perceived to be a problem. There are no records available, but most physicians and health professionals interviewed believed that correct doses of chloroquine usually cure malaria infections, and that recrudescences are uncommon.

2). Poor compliance with the recommended therapeutic regimen is widespread.

3). During the seasonal peak of transmission, complicated and cerebral malaria cases are frequently seen at the hospital. There is no "standard" treatment, although appropriate doses of parenteral quinine are used, when the drug is available. The hospital staff would be pleased if the MCP could provide a reliable and continuous supply of quinine for such cases, or those cases that did not respond to chloroquine.

4). Tetracycline is understood to be a useful antimalarial, though it is not routinely used.

5). Pyrimethamine/sulfadoxine (Fansidar) combination drugs are not available in the hospitals, dispensaries, or local stores. It is rumored that such drugs can be privately obtained from the mainland or overseas for exorbitant prices (e.g. 1 tablet of Fansidar = 300 T.Shs). Local health personnel are not knowledgeable in the use of these drugs.

6). Many patients prefer intramuscular injections of antimalarials, rather than taking oral preparations. Health professionals report

difficulties at times in convincing patients that tablets and syrup are rapidly curative when taken as directed.

7). Given the data gathered on chloroquine resistance, and the operational difficulties encountered, any program of mass chemoprophylaxis with chloroquine (even for selected groups such as pregnant women or young children) is no longer desirable.

8). The medical community, both preventive and curative staffs, would be receptive to a workshop planned by the MCP for health professionals on the current status of malaria in Zanzibar, and the current recommendations for the use of anti-malarials.

2.2.7. Epidemiology of Vector Susceptibility

During June 1983, a series of 20 susceptibility tests were made on batches of Anopheles gambiae which were exposed to DDT 4%, utilizing the standard WHO test method. The tests were carried out by the Project Entomologist, assisted by two parasitology laboratory personnel with some orientation in entomology. A brief analysis of results obtained shows:

<u>Test Location</u>	<u>Total No. Mosquitoes</u>	<u>Mean % Mortality</u>	<u>Range</u>
Town	93	78.65	70-87.3
North "A"	282	75.9	52.3-100
North "B"	199	47.26	41.3-58.3
West	280	63.7	41.9-73.7
Central	282	52.4	20-75.8

The results, as tabulated, do reflect a DDT resistant trend although the range is quite wide in most areas. Thus, meaningful interpretation of test results cannot be easily made. Until further tests are made it is felt by the MCP that DDT will give adequate mosquito kills. Additional susceptibility tests will be carried out on a systematic basis to determine the efficacy of DDT, in order to select the insecticide of choice for the 1985 spray operations.

Details of susceptibility tests to both DDT and Malathion are in Annex 4 A.

The Team is very concerned on insecticide selection for the spray operations and urges that susceptibility tests be given a high MCP work priority.

2.3. SPRAY OPERATIONS

The MCP spraying operations includes in its activities residual house spraying, ULV applications and larviciding. This activity would also be involved in source reduction and water management operations, but at present, there is no planned program for these two components. However, there are excellent opportunities for source reduction activities in Zanzibar Town as well as other urban areas.

2.3.1. Residual Spray Operations

There has been no residual house spraying carried on by the MCP during the 1981-1983 period on either Island. A history of residual spraying for the period 1974-1982 is attached in the Annex of this report (Annex 5 A). The Team was informed during its field travels that some limited residual spraying has been done on Unguja Island in 1982/83, but details were not available. It was assumed that such focal spraying was done in accord with a specific work request and not as a part of a MCP planned program.

The MCP staff is now in the process of spray operation planning for 1984. The Team did not receive a written plan, but was informed that operations would be done in selected areas on both Islands. On Pemba, the operation is planning to use Malathion, 50% wdp at a dosage of two grams/square meter (technical). The mosquito vector of malaria on Pemba has been shown to be resistant to DDT and Malathion will be used. On Unguja, the MCP is considering using DDT, 75%, wdp in selected areas on one-half the Island, and Malathion, 50%, wdp on the other half. Both insecticides will be applied at a two gram (tech) rate. There have been

discussions within the MCP to modify the spray applications by applying the insecticides only to the walls and outside eaves. The ceilings would not be sprayed. There has been no trial using this modified application method on Zanzibar, nor any trial using Malathion in field situations. The vector mosquito has been found to be susceptible to Malathion by the entomology services on both Islands. There appears to be a certain level of resistance to DDT of the vector mosquito on Unguja, but it still may be possible to use DDT effectively on that Island in specific locations.

The Team noted that the MCP has approximately 50 metric tons of Malathion, 25%, wdp on its inventory. The MCP informed the Team that this Malathion is not to be used in the residual spray program. Tests on samples of this Malathion indicated that it did not meet appropriate WHO standards for suspensibility and has a high iso-malathion content. The MCP is attempting to sell this Malathion to another department of the GOZ. It should be noted that USAID-supplied Malathion is not to be stored or inter-mixed with this sub-standard Malathion in any way. The Regional Pesticides Officer for East Africa has been contacted in regards to this Malathion, and is helping to correct the situation in an environmentally-sound manner. Approximately 20 metric tons of this Malathion are on Pemba. There is also some old DDT, 75%, wdp with the MCP, which was produced in 1968/69, and this material should be checked for suspensibility and technical quality prior to use.

2.3.2 LARVICIDING

A summary of the mosquito larvae control activities over the period 1974-1982 is attached in Annex 5 B of this report.

A review was made of this larviciding data by the Team. In brief, the larviciding activities to date appear to have only marginal effect, if any, on anopheline breeding and its impact on malaria incidence is questionable. The Team was unable to obtain a planned program for larviciding which included entomological evaluation and justification for this effort.

The Team was informed that larviciding is done in Zanzibar Town area as well as in Gamba (North Region), Bambi and Kidimni (West Region) and Makunduchi (South Region). It was reported by the MCP that approximately 600 liters of a diesel, oil and spreader mixture are used each week in Zanzibar for larviciding. The formulation is prepared by mixing 99 gallons of diesel, 1 gallon of oil and 3 pints of Triton-X. In Pemba, larviciding operations have been suspended due to the lack of larviciding materials. The last documented larviciding on Pemba was July, 1982.

On November 12, the Evaluation Team visited a number of areas which are under the larviciding operations in Zanzibar Town. The program observed by the Team is primarily a pest mosquito activity dealing with man-made mosquito breeding sites. Permanent water collections were seen and the Team was informed that these sites are visited and treated regularly. The MCP has made a concerted effort in some locations to involve the communities in maintaining the drainage systems in their areas. There has been some success with this approach and the Team encourages the MCP to continue these activities. The Team believes that most of the present activities being

done by the MCP in Zanzibar Town are activities best carried out by the Municipality. However, in periurban areas where intensive anopheline breeding is taking place, the MCP should remain in charge of this work. The MCP should provide technical guidance, but the work is best left at the local level as the town will continue to expand and the larviciding effort will take more and more resources - human as well as fiscal. If it is necessary that the MCP continue this activity, then it should be done on contract with the town in order to cover costs. Project funds from USAID are for the development of a malaria control program, and should not be used in a pest mosquito operation except on a reimbursable basis.

It should be understood that larviciding is an expensive operation which requires careful planning, strict supervision, timeliness, and accurate evaluations. Mapping of permanent vector breeding sites which are to be treated is essential. The area to receive larviciding treatment is to be accurately measured in order to apply correct dosages of the pesticide.

It was the Teams' impression that simply cleaning many of the present drainage ditches would dramatically reduce mosquito breeding in the town area.

2.3.3.U.L.V. Application (Ultra Low Volume)

The MCP has a total of 15 U.L.V. machines of which five (5) are to be truck-mounted, five (5) are shoulder models and five (5) are presently on rollers/ dollies. All units are from the Micro-Gen Company.

To date, there have been no U.L.V. applications made by the MCP, but plans are being developed to institute such work in 1984. The MCP is

planning to use formulated pyrethrum in these units to control high densities of mosquitos. The Team voiced technical concerns about this planned operation, but was informed by the MCP that no U.L.V. operations would be carried out unless adequate entomological evaluation had been done, proper training had completed for the machine operators and an approved policy and plan for such operation was available.

2.3.4. Training

The schedules for training spraymen and "oilers" are still in the planning stages. It is imperative from USAID's point of view that spray operation personnel applying residual insecticides receive proper training not only in spray techniques, but also on health safeguards and environmental protection. In the case of Malathion use, cholinesterase testing is to be done routinely on spray personnel including supervisors. Protective clothing is to be provided by the MCP and arrangements have been completed for acquisition of these uniforms. A supply of both personal and washing soap has been planned for use in the spray operations.

2.3.5. Equipment

It should be noted that on Pemba there were 113 sprayers and it was reported that none of the sprayers were in working order. A USAID order for approximately 260 Hudson sprayers is on order, but their time of arrival is presently unknown. It would appear from many points of view that a spray operation in February, 1984 is questionable.

2.3.6. Summary

In summary, a good deal of re-organization, planning, training, basic field work and field trials need to be completed before investing a large sum of money in a spray operation. It might be useful to the MCP to get an outside technician experienced in spray operations to assist in organizing the MCP effort for a few months. In any case, the spray operations should not be carried out without a carefully prepared plan, which includes training, equipment and personnel.

2.4. ENTOMOLOGY

2.4.1. General

The Entomology Section is under the supervision of Mr. Hamad Haji, holder of M.Sc. degree (Liverpool) and who has attended WHO special entomology studies in Kenya. Two microscopists have received limited in-service training in entomological techniques.

A general plan of implementation for the Entomology Section has been prepared and will be made a part of the future long-term MCP Plan of Operations. To-date, a limited series of susceptibility tests have been implemented in-country.

Over the life of the project, there has been slow response from the GOZ in the assignment of required entomology personnel. The Entomology Section has requested two B.Sc. graduates for Assistant Entomologists; 10 Insect Collectors; and 2 Squad Leaders.

Necessary items for entomological activities are not available, but are in the procurement pipeline.

When requested personnel are finally assigned, it is planned to hold an initial short training period.

2.4.2. Objectives and Implementation Schedule

The initial objectives of the Entomological Section are to (a) build a proper entomological service; and (b) to collect baseline data.

The specific objectives of the Entomology Section include (a) routine anopheline density and prevalence assessments; (b) determination of trends of vector resting and biting densities in relation to parasitological trends throughout the year; (c) investigations into the bionomics of the vector under various seasonal conditions; and (d) studies of susceptibility of vector to insecticides utilized.

The implementation plan for the Entomology Section will be developed by identification of localities for routine field observations according to geographical location and areas of high parasite rates. On Unguja, six (6) indicator locations will be selected: two in North, two in South, two in West. Activities will include spray sheet collection, hand catches, some larval collections, and manbiting studies, i.e. night catches. On Pemba, four (4) indicator localities will be selected: one in North, one in East, one in Central, one in South. Activities will be the same as those on Unguja.

Susceptibility tests will be carried out on specimens collected from various areas, including indicator localities. Precipitin tests will be collected in selected localities and sent to international laboratories for examination. It is planned to carryout bio-assay of insecticide residues in selected locations on a monthly basis following the spray rounds.

The Entomology Section is presently planning that an insectary will be organized and maintained at Headquarters Unguja to provide specimens for specification, bio-assay test, ULV cage tests, teaching purposes for staff and other incidental or specific research deemed useful to the MCP.

The Entomology Section plans for collaboration with other institutions, both in country and abroad in insect studies, provided that a plan is made for this collaboration and benefits are weighed against negative factors.

2.4.3. Staffing Patterns

The proposed staffing pattern for the entomology field team is as follows:

- Squad Chief
- 5 mosquito collectors

All direct supervision will be by Assistant Entomologist.
All entomology activities will be organized and directed by the Chief
of Entomology and Parasitology.

2.5. Health Education and Training

2.5.1. Objectives

The health education and training component of the Malaria Control Program (MCP) contributes directly towards the successful achievement of the overall Program purpose, which is the reduction of the prevalence of malaria in Zanzibar to a level at which it no longer constitutes a major public health problem. The health education component was to aid GOZ Ministry of Health (MOH) to:

1. Strengthen the institutional capability for providing an effective health education and community motivation program.
2. Establish basic and in-service training programs as necessary to develop and maintain all levels of malaria control workers.

2.5.2 EVALUATION OF PROGRESS TOWARDS ATTAINMENT OF OBJECTIVES

2.5.2.1. Training, General

The implementation of training activities as outlined in the PP is essentially 2 years behind schedule. For all intents and purposes, health education and training in the MCP began in October 1983, when a Health Educator was assigned to the program by the M O.H.

Of the 83 MCP supervisors and key staff members projected in the P.P., only 49 have been recruited (see Annex 6A). None of these people have had initial general training as suggested in the P.P. As a result of this lack of orientation, the Team observed that the 8 Malaria Agents interviewed during the course of their duties on Unguja were all uncertain as to how their activities relate to the objectives of the MCP.

Academic and technical training activities within Zanzibar under the MCP are listed in Annex 6B. The table indicates targets planned in the P.P. and number of personnel trained as of October 1983.

Between June 28, 1983 and November 12, 1983, three workshops (one in each region of Unguja) were held for a total of 41 ACD/malaria agents stationed in the North, West, and South Regions. The workshops covered methods used for registration of people and houses, blood slide preparation, and the appropriate use and dosage of chloroquine for the treatment of acute malaria fever cases.

Mr. Hamad J. Haji, the parasitologist/entomologist has provided in-service training to 8 microscopists since the project began.

In April 1983, a two-week international seminar sponsored by WHO on Malaria Control in Primary Health Care was held in Arusha, Tanzania. Dr. Muchi, the MCP Director, Mr. Haji, and the AID/Tanzania Health Officer attended the seminar.

The MCP has hired one staff photographer. A contract is being prepared for an instructor and an experienced photographer, to give him a two weeks intensive training in photographic techniques.

2.5.2.2. Overseas Training

a). In June 1982, the former MCP Director (Dr. Omar J. Khatib) and the former A.I.D./Tanzania Health Officer (Mr. Paul Ehmer) attended a U.S.A.I.D. sponsored conference in Washington, D.C. on malaria control programs in Primary Health Care in Africa.

b). Mr. Hamad J. Haji, Entomologist/Parasitologist, completed a 2-week observation tour in Sudan during September 1983 to determine what training opportunities exist for the MCP in Sudan.

c). Only one of the five fellowships planned for masters degree training in the U.S. has been filled. Dr. Omar, the former Director of the MCP, left Zanzibar in August 1983 to pursue a MPH in July 1984. Recruitment for future participants is still in progress. A tentative list of the MCP personnel who might profit from long-term academic or technical training, short observation tours and courses in the U.S. or third countries, has been prepared by the Program Director, and presented to the MOH Education Officer in September 1983 for the

concurrence of their Training Committee. (The Training Committee of the MOH consists of the Training Officer, Principal Secretary and all office Directors of the Ministry. This Committee meets once a month to review all candidates and their course of studies proposed for training).

Projected fellowships for U.S. and Third Country training are listed in Annexes 6C and 6D:

2.5.2.3. Preparation of Training Materials

The PP called for the development and preparation of training materials. Specifically, these included (a) a manual for drug distribution and dosage; (b) a public information campaign bulletin to be used by health workers, MOH attendants and rural health workers; (c) a manual describing residual spraying for spraymen; and (d) a revision of a malaria curriculum for school teachers. All these activities were to be completed by January, 1982. To-date, none of these materials have been prepared nor are any such materials under preparation according to the MCP.

2.5.2.4. Health Education

The MCP has not hired a full time Health Educator (HE). The sole qualified H.E. in the MOH at Unguja was assigned temporarily to the MCP in October 1983. He has two assistants at the MOH under his supervision. There is no documentary evidence that either of these assistants have had academic training in health education methodology. While neither of these assistants are currently working for the MCP, it is projected that one of them will be assigned full-time to the MCP to work on malaria control activities in January 1984.

In August 1983, a Peace Corps health education artist was transferred from the MOH to the MCP. At the time of the Team's visit, he was in the process of organizing the art shop and had not produced any training materials for the MCP. He is also expected to supervise and train two visual-aide attendants. Although his contract with Peace Corps ends in April 1984, he would consider staying in Zanzibar to work for the MCP on a personal services contract. He emphasized, however, that he would require program planning and guidance from a full time MCP health educator before designing health education material on malaria control e.g. manuals, pamphlets and posters.

Health education and training activities for the 7,000 balozis, 3,000 school teachers and 300 rural health workers, as indicated in the PP, have not yet been performed. However, a tentative program to involve these personnel in the MCP is attached in Annex 6 E. In the six schools visited by the Team, most of the interviewed school teachers informed the Team that they have had no health education courses, workshops or seminars on malaria control since the MCP was organized.

In all the three regions on Unguja visited by the Team, the Regional Malaria Officer is designated as the Health Educator for the region. The 13 health workers and ACD field staff interviewed stated that they had not yet had a course or seminar on health education under the supervision of the Regional Health Educator. In addition, the Team asked for, but was not able to locate, any documentation of activities

on health education conducted in the Regional areas.

However, a schedule has been prepared indicating proposed areas of community participation in FY 84. (See Annex 6 F)

For apparent personal reasons, all three regional health officers reside in Zanzibar Town. Because of these personnel and organization/administrative problems, activities under the sponsorship of the MCP have not commenced.

The staff of the MOH Health Education Unit has done some health campaigns under the sponsorship of the MOH which covered malaria prevention.

The Health Educator has also scheduled a number of programs for radio and television on preventive health to be aired before December 1983. MOH is allocated 15 minutes every week on radio and television for health education programs. Some of the topics scheduled are planned to include malaria prevention. Annex 6 G provides information on this schedule of activities. Although the Team did not view any of the programs on TV or hear the panel discussions scheduled for November 11, 1983, Mr. Hamid, the H.E., assured us that they were aired. The other activities such as meetings, library formation, training, exhibitions, and film shows have not yet been planned in detail. In addition to these activities, during the past 2 years the MOH has given 14 forty-five minutes lectures on general hygiene and communicable diseases to school children ages 14-18 in the urban areas. Some of these lectures covered the prevention of malaria,

It was reported that the teachers normally do not participate in these lectures.

During the Team visits to the MCP Regions, Health Attendants were interviewed at the Health Centers in Mahonda, Unguja, Ukuu, Bwejuu and Kilimani. Those Health Attendants reported that they discuss malaria preventive measures with patients that visit the health center. The health education approach they use is verbal instructions to patients and small group lectures. No posters, pamphlets or audio-visual materials on malaria were observed on the walls of the health centers visited. There is no documentation to indicate that any health education material had been produced in the past 2 years for small group meetings, house visits or school use.

The Health Attendants expressed a desire to have health education material including posters on malaria control for their health centers and home visits. None of them had produced any health materials on their own. The few posters and pamphlets inspected by the Team dated back to 1970 and these were found old, torn or spoiled photocopies of the original posters.

The Team was informed that the lack of health education material in the country is because the MOH Health Education Unit does not receive any budgetary allocations from the Ministry or from other ministries. The Health Education Unit depends on gifts and donations to support their activities. The last gift recorded was a supply of photocopying paper donated 2 years ago by UNESCO.

2.5.2.5. Health Education on Pemba

To date, health educational activities have not played an active role in the MCP on Pemba. There is no health educator assigned to the MCP office; there have been no knowledge, attitudes, or practices surveys, seminars for teachers, government or party officials nor are such activities projected for the near future.

It is planned that the MCP on Pemba will obtain at least one graduate in 1983 from the Rural Health Program Course on Zanzibar to begin health education activities.

2.5.2.6. Health Education Equipment

Annex 6 H lists all the audio-visual equipment for health education and training which has been purchased with project funds and is in storage at MCP headquarters. Most of the equipment has not been opened and is still in original boxes. A large part of the project equipment is for photography. A dark room is planned and is in the process of being set up. The Team observed the camera being used by the photographic assistant. The general Team consensus was that taking pictures of program activities was not efficient utilization of one person, and that the needed additional training, not only in photography, but in the operation of audio-visual equipment. The MCP reported that other duties are being assigned.

2.5.3. PROBLEM AREAS/CONSTRAINTS

2.5.3.1. Training

Team analysis of this sector of MCP activity indicates that the slow pace of training was due to several factors.

a). The long GOZ recruitment procedures.

By law all personnel for the program are recruited by the Ministry of Labor (MOL) with concurrence from the MOH. It takes a minimum of 6 months for specific positions requested by the MCP Director to be filled. This delay has prevented rapid employment of needed personnel. To-date, less than half of the proposed staff of 433 are on board.

b). Late arrival of project contract manager

The Project Manager arrived in May 1983, twenty-months after the loan agreement was signed. It is clear that Zanzibar MCP personnel expected this experienced contractor-technician to provide guidance, to plan, and to initiate project activities. Therefore, the late arrival of the technician delayed most of the educational activities and vital parts of the program. His recent arrival has generated enthusiasm to get health education and training components organized.

c). Lack of a full time Health Educator. (H.E.).

The project did not specifically call for the recruitment of a health educator. It was assumed that staff from the MOH Health Education Unit would be tapped to execute the health education component. The single H.E. (with the help of 2 assistants), performs all the health education work needed for the two Islands, as well as teaching health education at the nursing school and teacher training colleges. They have over-extended themselves, and frankly seemed overwhelmed by the tasks they have to perform.

d). Unclear Lines of Authority

The lines of authority in implementing the training and health education component are not clearly defined among the MCP Director, the MOH, the national party, and MCP staff. The responsibility of the MCP personnel are not consistent with their authority. For example, the MCP health educator does not have authority to call meetings of the Balozis in any region. All training is expected to be conducted through the regional branch of the political party, CCM. Training of school teachers can only be achieved through coordination of MCP/MOH activities with the Ministry of Education. Unfortunately, there appears to be no current mechanism whereby these various government agencies can efficiently interact, and coordinate mutually beneficial activities.

e). Lack of a Health Education Plan.

A detailed training and health education plan with a goal, purposes, input activities, and expected targets has not been prepared. Annex 6I outlines the Educational/Promotional responsibilities in the MCP prepared in October 1983. It covers the role of the Central Government, key individuals among the health professionals, and school teachers. It also covers course curriculum, refresher courses and obtaining and maintaining public support for the MCP. There seems to be difficulties in transferring these ideas into specific actions. For example, the Peace Corps health education artist is not

fully integrated into the MCP, does not have a job description, specific responsibilities, nor guidance as to the health education needs of the MCP.

f). Overly ambitious training and health education goals.

The training schedule as outlined in the PP is overly ambitious considering the limited trained manpower resources of the Island. Implicit assumptions that competent, motivated personnel would be available to implement the MCP have proven not to be accurate. This has created problems in recruitment of new personnel, training, and administration of the health education program.

2.5.3.2. Health Education

Many people receiving treatment do not understand how malaria is transmitted and do little to protect themselves. Old myths and superstitious about the source of fevers still persist, supervisors and health attendants need to review simple facts about malaria to make sure that they are understood clearly and correctly.

2.6. FISCAL SUMMARY

In-depth discussions were held by the Team with a variety of GOZ offices on support of the Malaria Control Program by the Government. The Team found that the MCP is receiving adequate program support at the present time. A summary of the fiscal contributions of the Government of Zanzibar towards the general health services and to malaria control is presented by the two tables below:

Table I.

ZANZIBAR MALARIA CONTROL PROGRAM

PROGRAM BUDGET SUMMARY - FY 1981 - FY 1986

<u>Fiscal Year</u>	<u>Budget Requests</u>	<u>Budget Approved</u>	<u>Budget Received</u>	<u>Budget Expended</u>
1980/81	2,955,680	2,955,680	2,955,680	2,955,680
1981/82	5,540,000	5,540,000	5,540,000	3,283,688.03
1982/83	7,000,000	7,000,000	7,000,000	5,500,000
1983/84	8,400,000	8,400,000	8,400,000	NA
1984/85	8,800,000	-	-	-
1985/86	9,200,000	-	-	-

* Data provided by GOZ/MCP

Note: No foreign assistance funds are included in GOZ/MCP budget.

Table II.

SUMMARY OF GOZ FISCAL SUPPORT TO HEALTH AND MALARIA CONTROL

FY 1981 - FY 1984 (000's-SHILLINGS)

<u>Fiscal Year</u>	<u>Total National Budget</u>	<u>Health Ministry Budget</u>	<u>% of Health in Total Budget</u>	<u>% of Health Budget for Malaria Control</u>
1980/81	712,700	75,000	10.5	3.9
1981/82	938,000	80,000	8.5	7.3
1982/83	1,000,000	90,000	9.0	7.8
1983/84	1,110,000	110,000	9.9	7.6

* DATA provided by GOZ/MCP

Note: No foreign assistance funds are included in GOZ/MCP budget.

These summary tables indicate among other things that the GOZ is providing a higher than normal share of its budget for health as most African Countries allot well below 5% of their total budget appropriations for health. This higher health input is visible in the field areas as the country has a health infrastructure which is functioning in the rural areas with trained staff, reasonably supplied and housed in adequate buildings. The amount of money allocated to malaria control exceeded expenditures in the last two years and is an indication of the slower-than-expected project development.

The USAID Project inputs of \$11,771,000 in Loan Funds are summarized below:

Table III.

SUMMARY OF USAID MALARIA CONTROL PROJECT FISCAL INPUTS

FY 1981 - FY 1986 (U.S. \$ 1,000's)

<u>Fiscal Year</u>	<u>Project Paper Estimated Input (\$)</u>	<u>Actual Expenditures^{1/}</u>
1981 *	1,895	-
1982	1,638	121
1983	1,832	214
1984	2,926	-
1985	2,136	-
1986 *	1,380	-
Total	\$11,771,000	

* figures are for six months only

1/ Expenditures provided by USAID/T, November, 1983.

It appears to the Team that the present Project is over funded if the PACD of September 30, 1987 is to be retained.

2.7. ADMINISTRATION

2.7.1. The Malaria Control Program (MCP) falls under administrative control of the Communicable Disease Control Office of the Department of Preventive Services and Health Education. It is administratively divided into 4 sections:

1. Administrative Section
2. Health Education Section
3. Epidemiology Section
4. Field Operation Section

For malaria control purposes, the country is operationally divided into the 2 islands with main operational offices in Zanzibar Town (Unguja), and Chake Chake (Pemba):

1. Unguja Island (often referred to as Zanzibar).

Unguja is broken down into 3 Regions: North, South, and West/Urban. There are 2 districts in each of the regions.

2. Pemba Island

Pemba is broken down into 2 regions: Southern, and Northern, each with 2 districts.

In total, the two Islands have 5 regions and 10 districts with a total population of 520,000.

2.7.2. Problems and Constraints in the Administration of Operations

Adequate transport is critical to all MCP operations. The MCP has purchased Land Rovers, trucks, bicycles, and other vehicles since commencement of operation (Annex 7 A)

1. The use of project vehicles for non-program use still persists. This was mentioned in Mr. Cowper's trip report of October 25, 1982- November 1, 1982. The problem was also discussed on several occasions this year with the Project Director by the USAID Project Officer. Many of the Project Land Rovers on both Pemba and Unguja have upto 28,000 kms registered on their odometers. These distances travelled appear to be excessive given the small size of the islands and the fact that spraying activities have not as yet started. It was noted during the Team's visit to Wete on Pemba Island that a project Land Rover was used to escort a visiting WHO official around the island for two days. It was also noted on a visit by the USAID Project Officer prior to this evaluation that a Land Rover on Pemba was used to transport a Cuban Nurse to visit MCH activities.

2. Stock control procedures did not appear adequate in the Pemba Malaria Control Office at Mbeke Chake. A stock control card file system could not be found and it is doubtful that it existed. Stock control was also not adequate in Project Headquarters on Unguja. A stock control system has yet to be instituted there despite previous recommendations.

3. The Unguja Island project office in Zanzibar City is much too small for efficient operation. Four workers share an office that should accommodate no more than 2 persons. The same shortage of space exists, but to a lesser degree, in some offices of the Project Headquarters in Zanzibar City. For example, the Administrative Officer and Secretary both occupy an office with adequate space for only one person.

2.7.3. National Committee on Malaria Control

This committee meets once a month and is chaired by the Regional Party Secretary (Urban and West). Members include Assist. Minister of Health; Director, Malaria Program; Malaria Advisor; MOH Health Educator; Mayor of Zanzibar City, ^{and} Representative of Ministry of Education.

The Committee so far formulates broad malaria policies only for Unguja. It will be expanded to include Pemba activities in the near future. As of now the Committee is very loosely organized and not very effective. Their impact on malaria control is minimal.

2.8. RESEARCH ACTIVITIES

There are no research projects currently in progress in the MCP, although several ideas were discussed by the MCP with the Evaluation Team:

1. Source Reduction by Biological Control:

There are several species of fresh-water fish which are natural enemies of mosquito larvae, and have been used with varying degrees of success in Europe, U.S., Africa, and Asia. The best known of such fish is Gambusia affinis, the top-feeding minnow, which is small (30-65 mm. length), not fit for human consumption, breeds rapidly, and easily reared. There are several other fish species which could be considered such as Nothobranchius spp. The Team saw at least one permanent breeding site in Zanzibar Town that would be suitable for a trial of larvivorous fish. Regular entomologic surveys of such breeding sites could monitor the effectiveness of such a method.

2. Chloroquine-induced Pruritus:

Itching as an acute side-effect following chloroquine administration has been described in the medical literature for several years. It is somewhat peculiar in its incidence and presentation, as it occurs almost uniquely in certain populations of Blacks, is more frequent among adults than in children, and while it is never life-threatening (i.e. progression to anaphylactic hypersensitivity, with laryngeal or pulmonary edema), it may be severely disabling, causing such distress to the affected individual that he is unwilling to take future doses of the drug. In addition, the itching is said to be poorly responsive to antihistamines.

The public health consequences are evident: if the prevalence of this uncomfortable reaction is great, the widespread acceptance of chloroquine as the drug of choice to treat acute malaria may be compromised.

The cause of this itching reaction is unknown, but speculative explanations include chemical impurities in the medication, concurrent infection with filariasis or other helminthic infections, and genetic predisposition of the individual. The Director of the MCP appeared interested in this problem, and it was suggested that a short, time-limited, inexpensive pilot survey via questionnaire of a population, might provide some initial data on the incidence of this phenomenon in Zanzibar. Once the magnitude of the phenomenon is established, a decision would be made as to the utility of studying the cause of this reaction.

3. Malaria Village Volunteers

In a number of countries, a system of village volunteers has been instituted. It may be useful to explore the possibilities of such a program on Zanzibar in the next few years. It should be noted that such programs require regular supervision and re-supply as well as recognition of volunteer efforts if the program is to be successful.

2.9. INTEGRATION OF ACTIVITIES WITH PUBLIC HEALTH DEPARTMENT

There is quite an impressive health infrastructure already existant in Zanzibar, with 81 dispensaries/health centers, one general hospital located on Zanzibar Town, and three rural hospitals in Pemba. In addition, there are two additional rural hospitals under construction on Unguja; one in the North, and another in the South of the Island. This network provides a fairly effective system of health care for the population since in most instances there is some medical facility within walking distance for all of Zanzibar's inhabitants.

Until November 1983, malaria agents were located in rural health centres collecting blood slides from clinical malaria cases. In November, with the start of house surveys and active searching of cases, blood slides were no longer collected in these rural centres. At the V.I. Lenin Hospital Out-Patient Department there are malaria microscopists from Unguja Island malaria laboratory collecting blood slides from these patients complaining of malaria or fever and sending those slides for examination to the Island laboratory, conveniently located approximately 100 meters from the hospital. In addition, blood slides from the hospital's in-patient wards are now examined in the malaria laboratory in view of the shortage of microscopes at the hospitals' pathology laboratory.

The Team believes that this current system of blood collection and microscopic examination is inefficient, and has very little practical value since in most cases treatment is given without waiting for laboratory results. These results are therefore useful only for checking the accuracy of clinical diagnoses and for hospital statistical recording.

The Team believes that there are many opportunities for the MCP to coordinate with the MOH in its development of a program of Primary Health Care. (PHC). In some areas of the world, the MCP s have become the basic PHC infrastructure base and provide a number of public health services. Coordinated planning between the MCP and the MOH for future health services is urged.

III. EVALUATION OF THE U.S.A.I.D. MALARIA CONTROL PROGRAM

3.1. Goals and Purposes of the Zanzibar Malaria Control Program

The Five Year Plan (1977-1982) of the Ministry of Health (MOH) under sections concerning the Community Health Department describes several responsibilities of the Zanzibar Malaria Control Program (MCP). These activities are given in this Plan as (1) Indoor Spraying; (2) Larviciding; (3) Chemotherapy and (4) Health Education. There were no quantifiable program objectives for the malaria control effort in Zanzibar provided in this document.

The Capital Development Plan of the Ministry of Health for the period 1981/82 to 1985/86 includes malaria control in its activities. (note: The GOZ Fiscal Year is from July 1-June 30). In Paragraph D of this Capital Development Plan, under Point 2 entitled "Projects Assisted by Foreign Aid", a malaria control effort is outlined which provides \$16.03 million dollars in GOZ and U.S. funding. In this Capital Development Plan there is no mention of specific goals or quantifiable targets to be accomplished by the MCP during the FY 82-86 period.

In discussions with the Director of the Malaria Control Program (MCP) during the Evaluation it was determined by the Team that no specific work-plan for the present or coming calendar year had been developed by the program which outlines MCP activities and provides benchmarks for evaluation purposes. During the visit of U.S.A.I.D.

Malaria Consultant, L.T. Cowper, in October 1982 to the Zanzibar Malaria Program, a recommendation was made to USAID/Tanzania that such a work plan was essential. It was also recommended during that Consultant visit that a detailed Plan of Operations should be prepared and, if assistance was required from external sources to prepare this document, a GOZ/MCP request should be made for Consultant services. At the present time, the program does not have GOZ approved targets or objectives for malaria control and no long-term plan is available except for the activities and targets proposed in the USAID Project Paper.

3.2. Goals and Purposes of the U.S.A.I.D. Malaria Control Project

The A.I.D. Project (621-0163) entitled the Zanzibar Malaria Control Project has its overall goal "to help develop a health services system which can improve the health status of the people sufficiently for them to enjoy life, participate fully in community development activities and contribute to the national goal of self-reliance."

The project purpose is to reduce the prevalence of malaria on Zanzibar to a level at which it no longer constitutes a major public health problem, through adaptation of control methods to local conditions in such a way that the Government of Zanzibar will be able to maintain effective control with its own resources.

The purpose of the Project to reduce malaria prevalence will be achieved through six related objectives (or sub-purposes):

1. reduction of vector density and disease transmission potential by source reduction in urban areas (40% of the population of Unguja and 13% on Pemba); larviciding and space spraying will be added where malariometric monitoring indicates the need;

2. reduction of vector density and disease transmission potential by intradomiciliary residual spraying of houses in the rural areas of highest malaria endemicity, in the periurban fringe area, and in selected foci of secondary importance;

3. reduction of morbidity through the prophylactic use of chloroquine distributed to those segments of the population at highest risk, i.e., infants, young children, school children and expectant mothers;

4. reduction of mortality through prompt treatment of suspected cases by distributing chloroquine for this purpose throughout the primary health care system and to selected community centers;

5. enhancement of community participation and community support for the malaria control program and its constituent activities through the development of an effective health education campaign; and

6. adaptation of the control methods cited above to the conditions present in Zanzibar through systematic, continuous monitoring of all project activities, i.e., operational research.

It was recognized at the time of preparing the Project Paper (PP) that total achievement of all the purposes was not likely. However, a series of end-of-project targets were prepared providing specific quantitative benchmarks for the project. An evaluation of these end-of-

project targets is provided in Section 3.3

Major assumptions for the achievement of the project's purposes included (1) that known malaria control techniques can be adopted to Zanzibar; (2) that the Government and the people continue to place a high priority on controlling malaria; (3) the population will support the program; (4) that selected control activities will result in a significant decline in malaria; and (5) that Zanzibar will be able to bear the recurrent costs once the program is stable.

The Project Paper outlines the parameters by which the End-of-Project (EOP) status is to be evaluated. These targets include changes in specified malaria indices as well as developing program processes over the life of the Project. The following EOP status benchmarks are included in the Project Paper;

1. the reduction of malaria prevalence by at least 33% from levels determined at the beginning of the project;
2. the reduction of mapped urban mosquito breeding sites by the least 25% ;
3. larviciding and/or space spraying going on in all urban areas and selected high endemicity areas where mosquito breeding continues;
4. 100% coverage of target households by the intradomiciliary spraying program;
5. vector density reduction of at least 80% in all urban and selected rural settings;
6. 80% coverage of target high-risk population by chemoprophylaxis program;

7. prompt chemotherapy of 80% suspect fever cases presented;
8. a reduction of morbidity, as indicated by passive case detection in health facilities, of at least 33%;
9. a high level of public awareness of and participation in the malaria control program; and
10. continuous modification of the program as a result of monitoring the information gained through operational research.

The Team carefully reviewed these project objectives as well as the project outputs during the course of the evaluation.

3.3. Present Progress and Accomplishments of the A.I.D. Malaria Control Project

3.3.1. Present Progress of the Project

The U.S.A.I.D. Project Paper (PP) for the Zanzibar Malaria Control Project was developed without the benefit of an approved long range GOZ Plan of Operations for Malaria Control. A.I.D. policy on malaria control assistance since 1973 has required a National Plan of Operations as a requirement in the provision of USG assistance support. Due to the absence of a national Plan of Operations, the U.S.A.I.D. Project Paper developed malaria control targets and objectives which may or may not be agreeable to the GOZ. In any case, the PP end-of-project objectives are not documented as GOZ-approved program targets for malaria control by any document available to the Team. The ^{project has}fallen seriously behind in its original implementation schedule and is now only beginning to develop

along the lines foreseen in the PP documentation.

It is estimated that the present project is now approximately two years behind in its original schedule. It is the Team's view that without clear policy and program targets which have GOZ approval, the program will continue to fall behind in implementing its planned operational activities.

There have been U.S. commodities ordered and supplied to the project. The U.S. long-term technician has arrived and some short-term consultant work on parasite resistance has been completed. The MCP is beginning to organize itself in its new offices and develop an organization. Project inputs are slowly changing the character and effectiveness of the Zanzibar malaria effort. To illustrate the gap between the Project Paper's implementation plan and the present situation, a summarized evaluation table is provided on randomly selected plan activities:

<u>Project Paper (PP) Implementation Schedule</u>	<u>Proposed Date</u>	<u>Program Status</u>	<u>Actual Date</u>
1. P.P. Approved	March 1981		September 1981
2. ETA long-term Contractor	September 1981		April 1983
3. Short-term Consultant	October 1981		August 1982
4. First Annual Work Plan	November 1981		None
(No work plan has been prepared to date for any year)			
5. Initiate Drug Distribution System in 4 areas.	January 1982		Not done

<u>Project Paper (PP) Implementation Schedule</u>	<u>Proposed Date</u>	<u>Program Status</u>	<u>Actual Date</u>
6. Train source reduction staff (Pemba)	May 1982		Not done
7. First Annual Report due	August 1982		" "
8. External Review	June 1983		November 1983

It is obvious that the project's present implementation schedule is not correct and that a revision of the schedule as well as some of the end-of-project targets are necessary. The USAID/Tanzania and the AID/W Africa Bureau, Technical Resources (TR/HN) are aware of the program's shortfalls and have agreed to the preparation of a revised project schedule and end-of-project targets.

In addition, there are technical factors which must now be considered in the program revision, such as widespread parasite resistance to chloroquine and increasing signs of DDT resistance of the vector mosquito. The prevalence of chloroquine-resistant parasites will interfere with the PP objectives to use chloroquine in widespread chemoprophylaxis programs. The original project proposals for End-of-Project (EOP) status aimed at 80% coverage of the high risk population (infants, children, pregnant mothers) by a chemoprophylaxis program. In spray operations it is not possible under ordinary conditions to obtain 100% coverage of target households as stated in the PP. These limited examples demonstrate the need for revision of the objectives in the Project Paper.

3.3.2. Summary of Project Accomplishments within
Major Budget Categories

3.3.2.1. Technical Assistance:

The U.S.A.I.D. Technical Advisor has been in place since May, 1983. The Project Paper called for two U.S. technicians, but USAID/Tanzania decided after consultations with the GOZ that only one U.S. technician would be assigned to the Project. The basis for the agreement to eliminate one position was the understanding that W.H.O. short and long-term consultants could be made available to take on a share of the workload. However, these W.H.O. technicians have not arrived as expected. The Project Paper budget included contractor costs in Overhead cost but this cost will not be made due to the direct negotiations with the present U.S. contract employee. To date, only one short-term consultant on transport and vehicle maintenance has been funded under the Project.

3.3.2.2. Local Hire

The Project Paper proposed an Administrative Assistant, one secretary and one driver. The Project has not engaged any of these staff.

3.3.2.3. Training

Long and short-term training in malaria control was planned in the PP. To date, there has been only one long term training grant for one MPH course in the U.S.A. This participant is now in course

work at Harvard.

There has been one short term training experience for a two week observation visit in Sudan for the Assistant Director, MCP which was loan-supported.

Project funds were used for the National MCP Director and the USAID Public Health Officer to attend a workshop in Washington, D.C. on Malaria Control in Primary Health Care in Africa, sponsored by the Africa Bureau of A.I.D./Washington, in June, 1982.

3.3.2.4. Commodities:

A large amount of commodities including 10 landrovers, trucks, motor scooters, spare parts, chloroquine, insecticides, office equipment, audio-visual equipment, furniture and appliances have either been ordered or are in the pipeline. The landrovers and trucks have arrived and are in use in the program. The insecticides (DDT, Malathion) are in the process of being ordered. The laboratory and office equipment have been received and are now being installed in the new office building of the Zanzibar MCP. The audio-visual equipment has arrived and are in storage. There is a large order for anti-malarial drugs being processed.

3.3.2.5. Other Costs:

According to the U.S. project technician, there has been no payment of "other costs" as outlined in the Project Paper.

3.3.3. Problems Impeding Progress:

There has been a number of problems which have impeded progress of the project. These problems are described below:

3.3.3.1. The change of the MCP Director in early 1983 has slowed the decision-making process in organizing and implementating the operational program. The present Director has not been trained in Malaria Control and is in the process of learning a difficult skill over the last few months.

3.3.3.2. The late arrival of the U.S. technical advisor has slowed the preliminary activities in developing the program.

3.3.3.3. The absence of the external technicians who were to assist in training, spray operations and evaluation has thrown a heavier-than-usual burden on the U.S. technician and has slowed activity.

3.3.3.4. Late procurement of insecticides has hindered progress in organizing the planned spray operations.

3.3.3.5. The slow recruitment of project personnel has hindered the implementation of the planned project activities which has influenced the progress of the project.

3.3.3.6. Due to slow recruitment, the training schedules have been delayed and planned activities have not been initiated as expected.

3.4. Future Planning and Activities of the U.S.A.I.D. Malaria Control Project

3.4.1. The Team believes that the project should be based on an approved GOZ Plan of Operations which reflects a clear statement of

goals and specific objectives. It is imperative that project personnel work with their GOZ counterparts in preparing such a long range plan as well as yearly work plans in order to guide the program towards mutually agreed targets.

3.4.2. The present Project Paper implementation plan and End-of-Project Targets are now out-of-date and need to be revised. Suggestions for a revised implementation plan are outlined in Section 3.4.8.

3.4.3. As the MCP plans develop, there may be opportunities for the assignment of short term consultants to assist in various project activities. Included in important consultant tasks are to (1) properly develop the training and health education activities; (2) organize the larviciding and residual spray program; (3) install proper evaluation procedures; and (4) to insure that drug treatment schedules are in accord with Zanzibar conditions. U.S. project personnel should consider efforts that will provide/^{WHO}technical inputs into the program. The assistance of WHO is especially desired in the field operations, training and entomology. Consideration might also be given to the involvement of other donor agencies in specific aspects of the project. Cooperative development with other third-party, non-U.S. government organizations has been successful in other U.S.A.I.D.-funded Malaria Control Programs.

3.4.4. More emphasis on training is now desired to bring the present MCP staff up to a satisfactory standard. The present MCP Director should receive training in malariology at a formal course

of instruction in order for him to function more effectively. The Team suggests to A.I.D. that the March, 1984 WHO course in malariology, scheduled to be held in Rome, Italy, might be suitable for this purpose. Other MCP senior personnel should be trained not only in the skills of malaria control, but in the principles of training other MCP staff.

3.4.5. The Project End-of-Project status (page 18 of the Project Paper) are in need of revision and the following revised EOP targets are suggested by the Team.

1. Malaria parasite rates as determined at the end of the project malarionetric surveys are not to exceed 3% in children 2-9 years old.
2. Organized and operating larviciding programs are in place in Zanzibar Town, Chake Chake, Wete and Mkoani. The program has mapped permanent breeding sites, a regular written schedule of work is used, and 90 personnel have been trained in larviciding techniques.
3. ULV spraying program has been developed with clear policy and program guidelines, a work plan and 20 operators have been trained in ULV application .
4. Residual spray coverage in targeted structures is no less than 85% during any given round of spraying.
5. The out-patient malaria attendance rates in hospitals and health clinics should not exceed 10%.
6. The malaria case fatality rate in hospital-admitted cases should not exceed 0.4%.

7. 95% of all houses in the rural areas of the country are to be visited by the malaria case finding mechanisms at least once every month.

8. 100% of all GOZ health institutions are to receive directives describing the appropriate drug treatment schedules for malaria and to be fully supplied with drugs.

9. An adequate system of technical and operational evaluation is in place within the program with a trained staff.

3.4.6. The Revised Project Outputs are suggested to be as follows:

- 1). The organization of the Malaria Control Program;
- 2). The establishment of a national malaria service able to plan, organize and implement disease control programs;
- 3). The organization, implementation, and evaluation of case search and treatment schemes on total coverage basis in cooperation with the general health services;
- 4). The establishment of effective vector control measures including effective residual spray operation, larvicide activities in selected urban areas and local space spray programs.
- 5). The establishment of epidemiological evaluation systems that will permit a dynamic adaptation of control methodology to the circumstances in Zanzibar;
- 6). The establishment of an effective health education and community motivation program;

7). The establishment of both basic and in-service training programs as necessary to develop and maintain all levels of malaria control workers.

3.4.7. The revised Implementation Plan for the Project is suggested as follows by the Team:

3.4.8. Revised Implementation Plan (1984-1986)

The following tentative schedule is suggested as a basis for developing a revised implementation schedule for the period 1984-1986. The activities listed have been developed through joint discussion with GOZ/MCP and USAID offices.

1984

January - Health Education Program approved -

January-December.

- Recruitment and initiate in-service training of Entomological Assistants - January-April.
- Preparation and completion of workplan for remaining portion of FY 1984.
- Consultant assistance in Spray Operations- January 15 - April 15.
- Repair/maintain spray equipment.
- Training of National Service Corps personnel.
- Health Education Demonstration/Exhibitions/ Radio, TV programs.

- Recruitment and training of 11 microscopists for Pemba - January-June.
- Laboratory diagnosis of blood slides - continuous activity for PCD, and malarionetric survey slides.
- Completion of geographic reconnaissance.
- Map permanent mosquito breeding sites in four urban areas.
- Limited malarionetric survey in selected localities.
- In-vivo chloroquine sensitivity test on Unguja (North) complete by February.
- Issue instructions for malaria inputs to eliminate blood slide collection and do only case treatment.
- February - Completion and GOZ approval of workplan.
- Training of spray personnel for spray operation and larviciding.
- Insecticide distribution, storage.
- Establish mosquito rearing facilities - February-May.
- Begin plan of operation - FY 1984/85-1986/87.
- TA-supply management for six weeks.
- March - Cholinesterase testing of spray personnel.
- Initiate spray operations - March-April.
- Quarterly Report of MCP.

- Short term training in Malariology - Italy, March-June.

April - Completion of spray operation -April 15.
- Cholinesterase testing.
- Budget and fiscal planning for FY 1984/1985

- Completion of TA in Spray Operations.
- TA in Health Education and Training - One Month.

May - Completion of workplan for FY 1985.
- Training for U.L.V. operators.
- Completion of 3 year Plan of Operation.
- Susceptibility tests of mosquitoes - May-August.
- Bio-Assay tests - May-August.
- Entomological monitoring of behavior dynamics/density - continuous activity through remainder of project.
- Chloroquine-sensitivity tests and studies May-November.

June - MCP personnel appraisals completed.
- Quarterly Report.
- Completion of microscopist training - Pemba.

- Completion of residual spray reports on achievements.

- ULV applications where required.

July - Planning for off-shore procurement initiated.

- Malarimetric surveys July-August

- Initiate study/observation tours for senior staff.

- Procurement order issued.

- ULV applications where required.

- Completion of two sites in North and South Pemba for in-vivo chloroquine susceptibility .

August - Completion of procurement arrangements.

- Observation tours for senior staff.

- ULV application as required.

- Completion of mosquito susceptibility tests.

- Preparation of Annual Report

- Retraining of parasitological, entomological and field operation supervisory personnel.

September - Quarterly Report preparation.

- Continue MCP activities in laboratory examinations, entomological parameters.

- International Conference - Malaria and Tropical Medicine.

- Technical Assistance - Operations for larviciding training, operations, and evaluation September-November.
- Larviciding Plan initiated.
- October
 - On-going MCP activities - Ent, Laboratory, Health Education.
 - M.Sc. candidates selected and training forms completed for September, 1985 entry.
 - Consultant malaria advisor from AID/W, AFR/TR or ST/H to review project activities.
- November
 - Off-shore commodities begin to arrive November-December.
 - On-going MCP activities.
 - Short course/observation tour for 3 senior staff.
 - Malarimetric survey
 - Internal Evaluation.
- December
 - Quarterly Report
- 1985
- January
 - Health Education Program approved - January-December.
 - Technical Assistance for Spray Operations requested for mid-February-mid April.
 - Equipment repair and maintenance.
 - Training sessions for senior staff on Operations.

- Laboratory services for BS examination
January-December.
- Supplies/Equipment distributed to field.
- Stock inventory completed.
- Bio-Assay tests carried out - January-
April.
- Training of national service personnel.
- Entomological studies - January-
December.

February

- TA on spray operations, larviciding
arrives.
- Training of spray personnel.
- Cholinesterase baseline testing.
- Health education in Villages on spray
operations.
- TA-Supply management for 4 weeks.

March

- Initiate spray operations.
- Quarterly Report
- Prepare for observation tours for senior
staff. July-August.
- Short-term training in Malariology in WHO
senior course - March-June.
- Cholinesterase testing of spray
personnel.

April - Begin workplan for FY 85/86.

- Budget and fiscal planning
- Completion of Spray Operations -

April 15

- Completion of TA - Spray Operations
- Susceptibility tests -April-August

May - Completion of workplan FY 1985/86

- Chloroquine in-vivo testing - initiated in Zanzibar Town.

- Training of U.L.V. operations.

June - MCP Personnel Appraisals completed.

- Quarterly Report completed.
- Compilation of spray results completed.
- U.L.V. applications as necessary.
- Susceptibility tests for mosquitoes (June-August).

July - Susceptibility tests for mosquitoes July - August.

- Procurement Planning initiated and completed.
- Malariometric surveys completed.
- In-vivo chloroquine sensitivity tests completed
- ULV applications as required.

August - Observation Tours for senior staff.

- Procurement documentation forwarded for commodity order.
- Initiate Annual Report
- 1st long-term candidate leaves for training.
- In-service training for senior staff (District/Regional)

September - Annual Report Completed.

- 2nd External Team Evaluation of Project.
- Quarterly Report completed.
- in-service training for MCP staff.

October - Long-term training candidate selected and forms completed for September, 1986.

- TA - Operations - larviciding, refresher training (one month).

November - Malarionetric surveys completed.

December - Commodities arrive and distribution begin to field

- Quarterly Report
- Internal Evaluation
- MCP personnel conference

1986

- January
- Action on long-term Technicians' contract (TA)
 - Health Education Program approved - January to December
 - Training of National Service Corp personnel.
 - Entomological activities and plan approved January-December for monitoring entomological parameters.
- February
- Spray operation training.
 - Baseline Cholinesterase testing.
 - Village health education for spray operations.
- March
- Spray Operations initiated.
 - Quarterly Report.
 - Bio-Assay tests - March, April.
- April
- Spray operations' completed - April 15.
 - Budget/fiscal planning initiated.
 - Workplan for 1986/87 prepared.
 - susceptibility tests - April-August.
- May
- Personnel Appraisal completed (May-June).
- June
- Quarterly Report.
 - ULV applications as required.
- July
- malarionetric surveys completed - July-August.
 - Procurement process initiated.
- August
- M.Sc candidate leaves for U.S. training.
 - Procurement Process completed.

- September - Annual Report completed.
- Quarterly Report .
 - Final Evaluation of Project.

Project funding is presently planned upto 30 September, 1986 .

PACD is September 30, 1987.

IV. RECOMMENDATIONS AND SUGGESTIONS:

The Evaluation Team found a situation which greatly differed from that found at the time the Project Paper was prepared and authorized. The technical, operational, and administrative approaches of the Project need to be reviewed and adapted to these new circumstances. Therefore, the Team has prepared the following recommendations and suggestions for the implementation of the malaria control efforts and some suggestions for increasing effective USAID support to the project. These recommendations have been presented and discussed with MCP officials, prior to their final form.

4.1. Recommendations and Suggestions for Program Implementation:

4.1.1. Epidemiological Status and Surveillance Operations:

4.1.1.1. While the 3rd Tactical Variant (i.e. reduction of malaria prevalence) should remain the main approach to malaria control in the most populated areas of the country, in isolated areas or in areas of difficult accessibility, Tactical Variant 1 (i.e. reduction of specific mortality) should be applied.

4.1.1.2. During the next two years, malaria agents should stop routinely collecting blood films from suspected malaria cases since these slides are of no use either for evaluation or treatment purposes. They will have to maintain their house to house search of cases and treat those clinically diagnosed.

4.1.1.3. For the time being and until prevalence rates drop to below 3% at any time of the year, the project's regular epidemiological assessment should be based primarily on blood malarionetric surveys which

in
should be carried out twice a year/July and November in statistically significant samples or in indicator localities among infants, 2-9 year-old children, and adults. Clinical morbidity of severely ill cases and mortality rates from hospital records should remain the main source of information for the assessment of the efficacy of the application of the first tactical variant.

4.1.1.4. As the workload on the malaria agents will be reduced with the stoppage of blood-film taking, they should be employed to take charge of conducting spraying activities as squad leaders. They should therefore be trained in spraying activities, and should be able to train, supervise and assess spraymen work.

4.1.2. Surveillance of Drug Susceptibility and Use of Antimalarials.

4.1.2.1. Drug susceptibility testing should primarily be assessed by the WHO Standard In-vivo Field Test.

In-vivo testing in comparable groups in a) Unguja North; b) Pemba North; and c) Pemba South, should be completed within the next six months. Repeat testing in Zanzibar Town should be done in July 1985, 3 years after initial documentation of chloroquine resistance. Concomitant In-vivo testing with WHO Macro or Microtechniques may be desirable at that time in order to compare results with previous data.

4.1.2.2. The MCP should consider the use of amodiaquine as an alternative first-line drug. In-vivo testing with

amodiaquine, concurrent with chloroquine testing, may provide a data base on which to evaluate the potential utility of this antimalarial.

4.1.2.3. Unequivocal data on the prevalence of chloroquine-resistant Plasmodium falciparum suggests that a program of mass chemoprophylaxis with chloroquine would not significantly reduce malaria-related morbidity or mortality, and would probably increase the prevalence of resistant parasites over time. The MCP should not engage in any such mass prophylaxis program.

4.1.2.4. In view of the MCP decision to retain chloroquine as its first-line drug, it is mandatory that all patients be informed of, and treated with, the standard WHO-approved therapeutic dose of 25 mg. base/kg. body weight. All Malaria Agents responsible for drug treatment should be instructed in proper and accurate prescribing, and all Agents should be routinely monitored by District Supervisors. The Director of the MCP should direct that a poster describing the appropriate doses of chloroquine and other antimalarials, for adults and children, be made and duplicated, and that copies be posted in every hospital, out-patient department, clinic, and rural dispensary on Unguja and Pemba, no later than January 31, 1984.

4.1.2.5. The MCP should carefully consider the need for alternative antimalarials. Since chloroquine can no longer be presumed to be life-saving in all infections, consultation and cooperation with the Department of Curative Services on the use of other drugs is recommended. The Team suggests that the MCP procure a supply of parenteral and oral quinine to be used only in those cases where a) the infection is unresponsive to chloroquine; or b) the severity of infection demands

initial intravenous therapy. The Team strongly recommends that the MCP carefully monitors the storage, distribution, and clinical use of quinine, and reminds the Program that uncontrolled and inappropriate use may lead to parasite resistance and the problems of host toxicity, cardiovascular failure and malarialhaemoglobinuria (Blackwater Fever). It is further recommended that patients requiring quinine due to infections refractory to chloroquine receive a therapeutic course of a schizonticide, such as tetracycline.

4.1.2.6. Due to its high cost and potential for misuse leading to parasite resistance, the Team does not at this time recommend the use of sulfadoxine-pyrimethamine (Fansidar) as an alternative antimalarial.

4.1.2.7. At no time should the project purchase parenteral Fansidar as an alternative antimalarial.

4.1.2.8. The MCP should ensure that all pharmaceuticals procured pass standard tests for quality-control, either at the point of drug manufacture, or at an independent analytic laboratory.

4.1.3. Spray Operations

4.1.3.1. All insecticides used in the Zanzibar Malaria Control Program (MCP) are to meet WHO specifications and to be stored, handled, applied and transported in a safe, orderly manner, with strict regard to environmental considerations.

4.1.3.2. Residual spray applications should be done in accord with standard methodology at dosage rates which have been determined to be effective. Deviations in standard spray methodology are to be made only after controlled trials have been completed.

4.1.3.3. All spray personnel engaged in insecticide applications are to be trained not only in spray techniques but in health and environmental safeguards. Regular cholinesterase testing is to be done on all spray personnel applying Malathion. Protective clothing is to be provided. Limited amounts of Atropine should be available to the Teams in case of emergency.

4.1.3.4. Residual spray operations, larviciding and U.L.V. applications are to be performed in accordance with a workplan which includes objectives, targets and evaluation benchmarks.

4.1.3.5. Over the present project period, the MCP should apply only one round of insecticide application in a year during the March-April period. Other focal spraying may be considered if required by the program on a case-by-case basis. If the spray operation commodities are delayed in 1984 and the spray program can not be completed by 15 April, the Team recommends that this spray round be delayed until the 1985 operational period.

4.1.3.6. The MCP larviciding operation should be based on mapped permanent breeding sites, size of areas to be covered, detailed work schedules, entomological and operational evaluation and done on a cost-effective manner against anopheline species by trained personnel.

4.1.3.7. Recruitment of a short term consultant for up to 4 months in each year of 1984 and 1985 for organizing and establishing an effective spray operations including larviciding and ULV applications should be considered by the MCP in order to focus attention on these important activities and develop program capabilities.

4.1.3.8. The choice of insecticides for USAID procurement in 1985 and 1986 is to be based on entomological evidence as well as epidemiological evaluation of the impact of the insecticide on the malaria situation.

4.1.4. Entomology The collection of basic entomological data should receive top priority. Entomological teams, on both islands should be promptly organized, fixed catching stations which represent different epidemiological strata should be selected and base-line entomological information should be collected in order to be able to assess the future impact of anti-vector measures.

4.1.5. Health Education and Training

4.1.5.1. The Team has reviewed the proposed training plan for the project personnel and finds it adequate and encourages that it be implemented as scheduled. However, it should be

sure that the personnel to be trained are directly involved in MCP.

4.1.5.2. To assist the Health Educator nominated for the Project, the Team recommends that a technician in Public Health Education/^{who is} experienced in malaria control information services be contracted as soon as possible, i.e. early 1984, for 6-8 weeks to help in the preparation of a health education plan and/^{to} provide guidance in the development of the necessary training materials for the project. Subsequent visits can be arranged according to need.

4.1.5.3. A strong linkage to the MOE should be established to assist the Ministry to include a syllabus on malaria control in the school curriculum for public schools, teachers training colleges and the nursing schools.

4.1.6. Administration

4.1.6.1. That a strict system of vehicle trip sheet control be instituted for all project vehicles. These sheets are to be inspected for accuracy by the Senior Malaria Control Project Officials on each Island at least once each week.

4.1.6.2. Each vehicle should undergo a maintenance inspection once a week by the senior Island Malaria Official. This inspection should include, but not be limited to, batteries, tires, oil, lube and water levels, adequate greasing, and the general cleanliness of the engines.

4.1.6.3. It is recommended that a system be instituted to ensure that project vehicles be used for malaria control activities only. If a project vehicle is used by non-malaria control authorities for other than MCP use, it should be reported immediately to the Director, Zanzibar Malaria Control Project, in writing. This written report should include all pertinent information such as name and title of person asking for the vehicle, purpose of use, mileage used, and whether project-funded fuel was used.

4.1.6.4. That a qualified administrator be recruited and given responsibility for all project administrative activities, personnel, fiscal, commodity procurement and storage, motor vehicles, etc.

4.1.6.5. A records maintenance system be established.

4.1.6.6. The MCP should consider requesting the MOH for the establishment for a petty cash account to pay for small purchases of vehicle parts, stationary, office items.

4.2. Suggestions to USAID/Tanzania on USAID Malaria Control Project

4.2.1. The Project should revise the present Implementation Plan, the Project Outputs and End-of-Project status in accord with the suggestions made in the report in Section III.

4.2.2. The future procurement schedule is to be based on a GOZ approved Plan of Operation and the yearly workplan. The Team recommends to USAID/T that no further major procurement of insecticides or drugs be made unless such plans are available and have a favorable USAID review. The present commodity orders are not included in this recommendation.

4.2.3. USAID/Tanzania should make determined efforts to obtain WHO and other external assistance for various aspects of the program. Specialized consultants for the program are to be provided only on written request by the GOZ/MCP.

4.2.4. A second external evaluation for the Malaria Control Project should be scheduled in mid-to-late CY 1985.

4.2.5. It is suggested that copies of major malaria control project documentation, such as annual reports and major workplans from GOZ/MCP, should be sent by USAID/Tanzania to AFR/TR and if desired, to ST/H in order to keep concerned AID/W offices more up-dated on project progress.

4.2.6. A stock control card system should be instituted immediately for all project commodity storage activities. This will include insecticides, sprayers, larviciding equipment and vehicle parts. etc.

No additional A.I.D. funded major commodities are to be procured after March 31, 1984 unless such a system is in place.

4.2.7. Suggestions for Program Development

4.2.7.1. Personal protective measures may contribute to reducing the frequency of man-vector contact. It is suggested that the utilization of such measures should be promoted particularly by the use of mosquito bed nets and of long-time burning mosquito coils.

4.2.7.2. Volunteers should be encouraged to participate in the MCP for the diagnosis of fever cases and provision of chloroquine. The volunteer program has been used effectively in various areas of the world with high incidence of malaria such as India, Thailand, South and Central America with considerable success. The Zanzibar National Service Corps can be one of the mechanisms used to supplement MCP activities in the rural areas of the Island.

4.2.7.3. The MCP medical records employee should be attached to the Statistical Section of MOH in order that he can acquire needed statistical skills for the program.

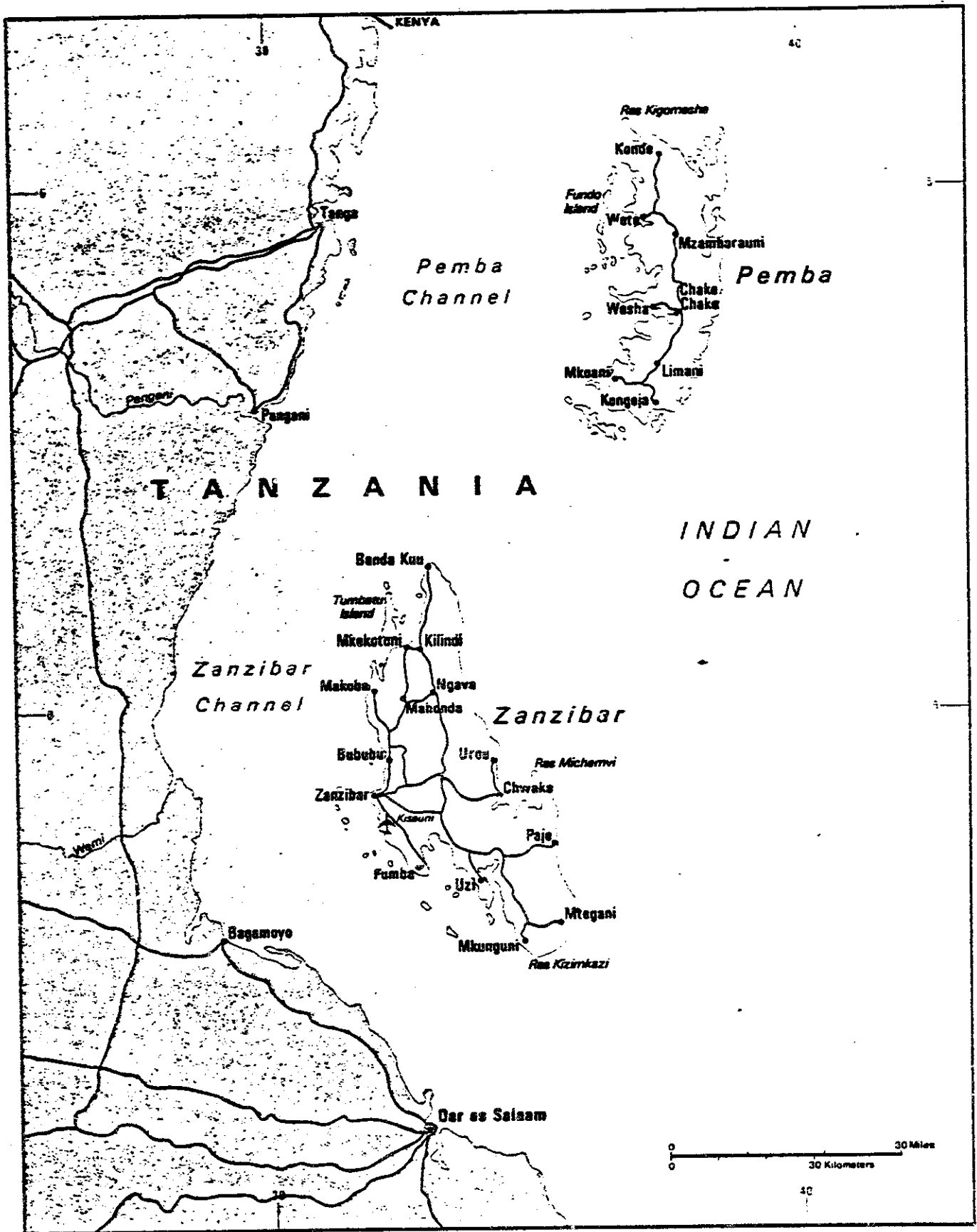
4.7.7.4. Utilization of the political party's structure may be useful in encouraging community participation and dissemination of information on malaria control.

V. Acknowledgement

The Mid-term Evaluation Team of Zanzibar Malaria Control Project wishes to express its gratitude to H.E. the Acting Minister of Health Honorable Mohammed Faki and to the Honorable Dr. Mahmoud Idi Hassan, Assistant Minister of Health, for all the courtesies, facilities, and support the Team received during their mission to the country. We wish to mention the warm welcome and full support they received from the People's Party and Administration Officials in every Region and District they visited. The Team is particularly grateful to Dr. Juma Muchi, Director, Malaria Control Program, and all his staff for their unconditional support, and for the amount of work and goodwill they put in organizing the Team's work at central and field levels, without which the completion of our mission would not have been possible.

We also wish to thank Mr. Arthur M. Handly, Director, A.I.D. Mission Dar es Salaam and all his staff for their friendly backing which facilitated so much our assignment. We are especially grateful to Ms. Zainab H. Daruger and Ms. Samira M. Ratansy for their excellent clerical and administrative assistance.

Zanzibar and Pemba



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 — Road
 ✈ Airport

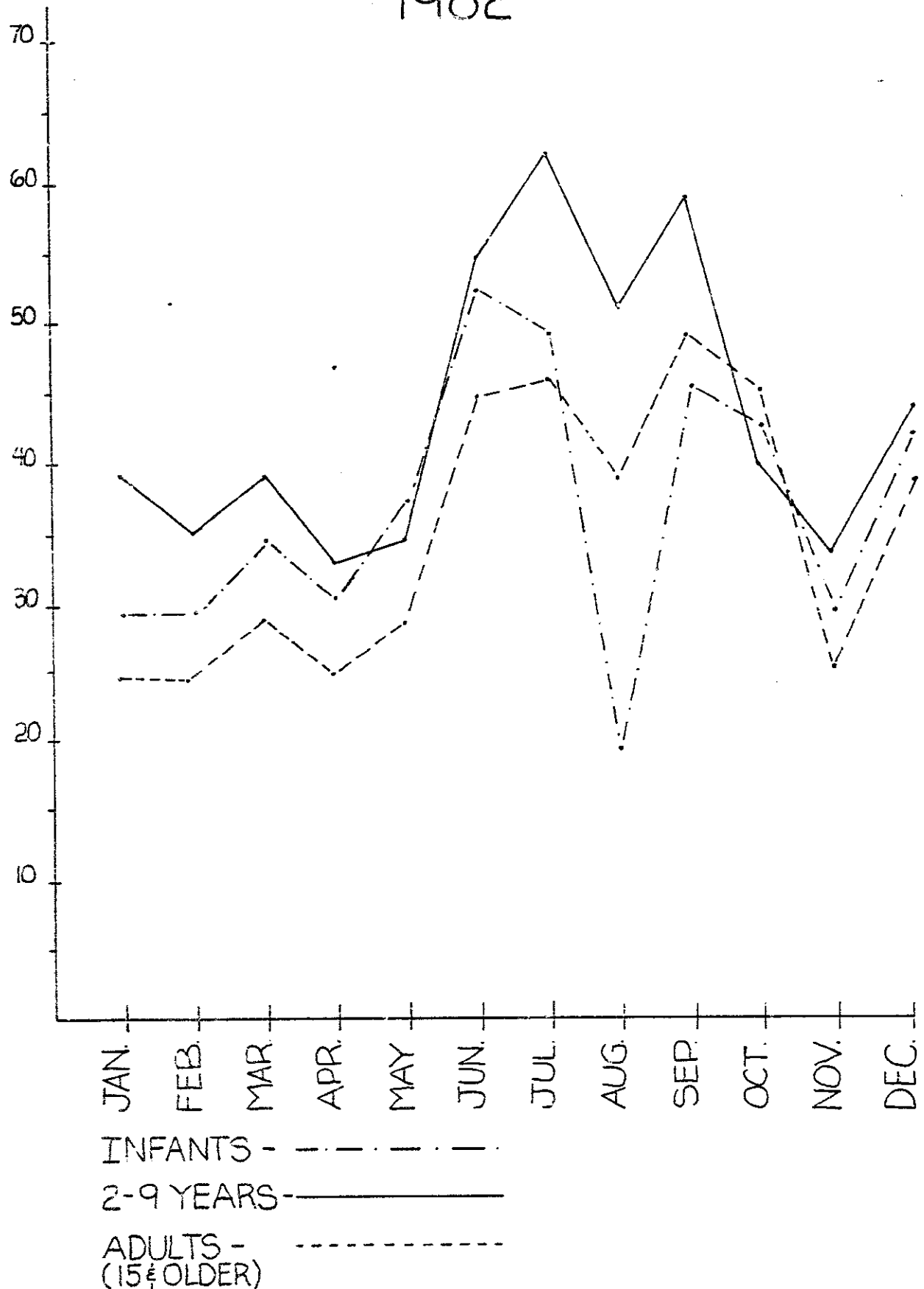
ANNEX 1

MAJOR RESOURCE REFERENCES USED IN
EVALUATION REPORT

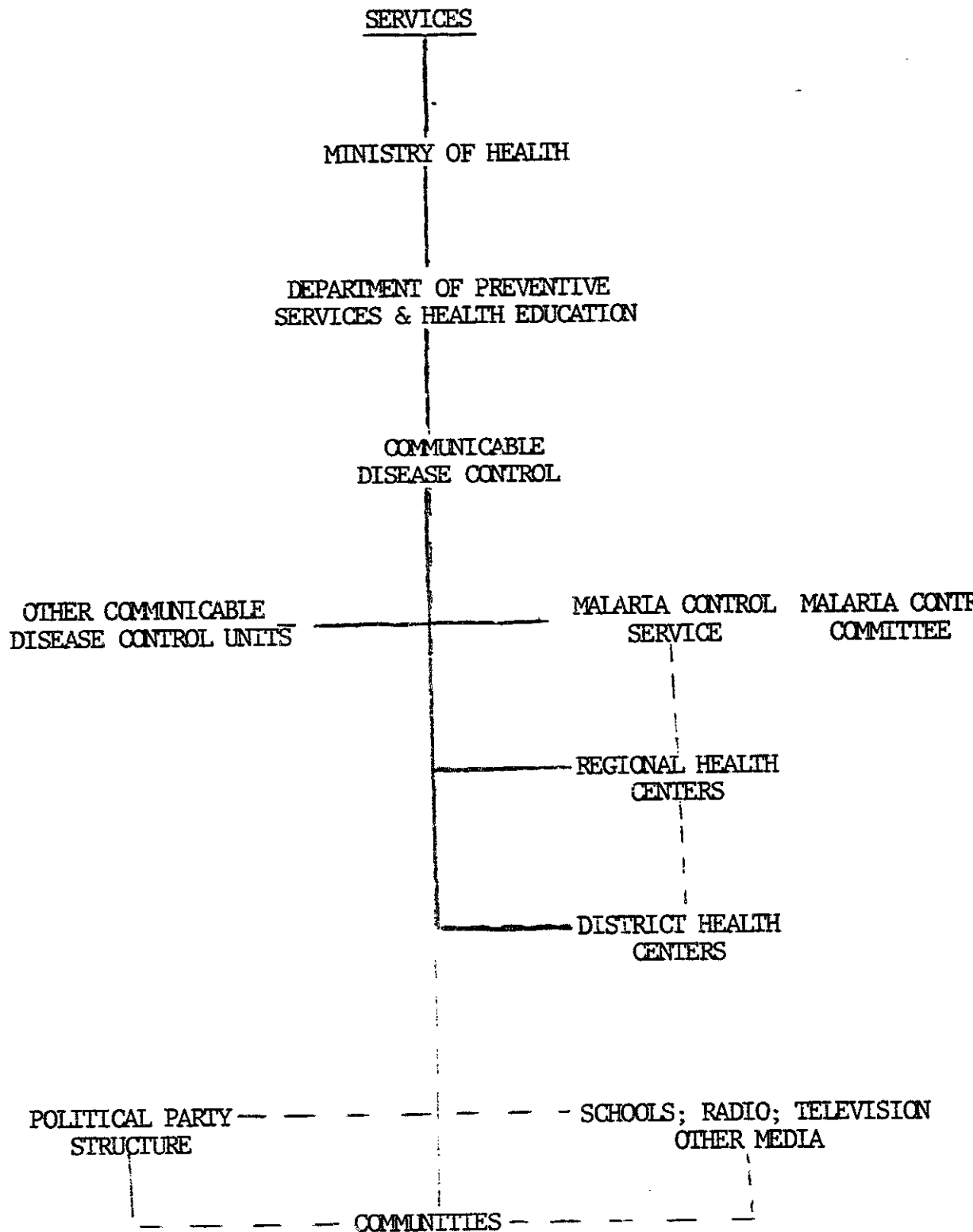
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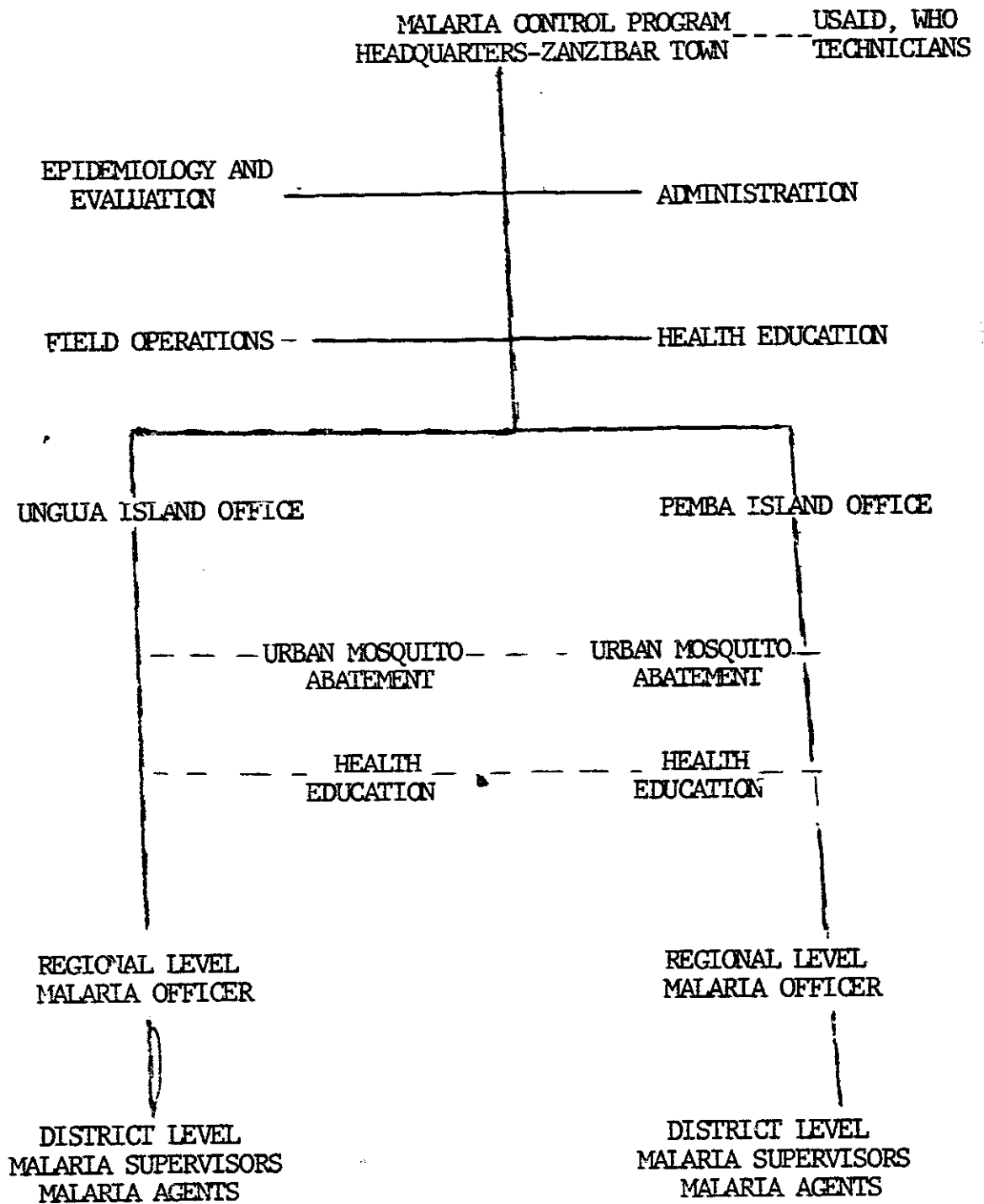
MONTHLY VARIATIONS OF BLOOD POSITIVITY RATES AMONG OUT-PATIENTS IN ZANZIBAR TOWN 1982



MALARIA ORGANIZATION - ZANZIBAR MALARIA



MALARIA PROGRAM ORGANIZATION



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ANNEX 3A:

MAJOR ADMITTING DIAGNOSES, IN-PATIENTS, V.I. LENIN
HOSPITAL ZANZIBAR, 1981

	<u>Diagnosis</u>	<u>Number of Cases</u>	<u>Relative Morbidity Rate (%)</u>
1.	Malaria	2,779	16.2
2.	Measles	1,479	8.6
3.	Digestive	1,397	8.2
4.	Respiratory Disease	1,378	8.1
5.	Nutritional Deficiencies	875	5.1
	Cumulative Morbidity Rate		42.6

ANNEX 3B:

MAJOR CAUSES OF DEATH, IN-PATIENTS, V.I. LENIN
HOSPITAL, ZANZIBAR, 1981.

	<u>Cause</u>	<u>No. of Deaths</u>	<u>Relative Mortality Rate (%)</u>
1.	Measles	99	19.1
2.	Malaria	92	17.6
3.	Nutritional Deficiencies	84	16.0
4.	Pneumonia	53	10.0
	Cumulative Death Rate		63.7

ANNEX 3C:

MAJOR ADMITTING DIAGNOSES IN ALL ZANZIBAR
HOSPITALS (IN-PATIENTS) 1982.

	<u>Diagnoses</u>	<u>No. of Cases</u>	<u>Rate (%)</u>	<u>Cumulative Rate (%)</u>
1.	Malaria	7,331	25.2	25.2
2.	Diarrhoea	3,637	12.5	37.7
3.	Measles	3,469	11.9	49.6
4.	Bronchitis+ Pneumonia	3,129	10.8	60.4
5.	Malnutrition	1,475	5.1	65.5

ANNEX 3D:

MAJOR CAUSES OF DEATH IN ALL ZANZIBAR
HOSPITALS (IN-PATIENTS) 1982

	<u>Children</u>		<u>Adults</u>		<u>Total</u>		<u>Cumulative Rate (%)</u>
	<u>Nos.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	
1. Measles	401	29.4	1	0.2	402	20.7	20.7
2. Malaria	219	16.1	99	17.0	318	16.4	37.1
3. Bronchitis+ Pneumonia	233	17.1	41	7.0	274	14.1	51.2
4. Diarrhoea	174	12.8	86	14.8	260	13.4	64.6
5. Malnutrition	131	9.6	70	12.0	201	10.2	74.8

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ANNEX 3E:

MALARIA CASE FATALITY RATES IN ALL ZANZIBAR
HOSPITALS (IN-PATIENTS), 1982

<u>Children</u>			<u>Adults</u>			<u>Total</u>		
<u>Cases</u>	<u>Deaths</u>	<u>Fatality Rate%</u>	<u>Cases</u>	<u>Deaths</u>	<u>Fatality Rate %</u>	<u>Cases</u>	<u>Deaths</u>	<u>Fatality Rate %</u>
3,046	219	7.2	4,285	99	2.3	7,331	318	4.4

ANNEX 3F

MALARIA MORBIDITY RATES AMONG OUT-PATIENT CLINICS
IN ZANZIBAR (NEW ATTENDANCES) 1ST AND 2ND QUARTERS,
1983

UNGUJA ISLAND

BY REGIONS

	<u>Town</u> %	<u>West</u> %	<u>South</u> %	<u>Centre</u> %	<u>North A</u> %	<u>North B</u> %	<u>Total</u> %
1st quarter	25.8	26.9	23.1	17.7	15.2	16.9	21.6
2nd quarter	24.5	26.6	26.7	17.9	21.5	26.1	23.5

BY AGE GROUP

	<u>0-4</u>	<u>5-14</u>	<u>15+</u>	<u>TOTAL</u>
1st quarter	21.4	22.6	21.2	21.6
2nd quarter	22.4	23.8	24.0	23.5

PEMBA ISLAND

BY REGIONS

	<u>Konde</u>	<u>Wete</u>	<u>Chake-Chake</u>	<u>Mikoani</u>	<u>Total</u>
1st quarter	12.4	19.1	21.2	22.6	18.6
2nd quarter	19.3	23.1	19.5	29.6	22.9

BY AGE GROUP

	<u>0-4</u>	<u>5-14</u>	<u>15+</u>	<u>TOTAL</u>
1st quarter	18.6	17.6	19.0	18.6
2nd quarter	24.4	21.2	23.0	22.9

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ANNEX 3F Continued:

ZANZIBAR (both Islands)

BY AGE (YEARS)

	<u>0-4</u>		<u>5-14</u>		<u>15+</u>		<u>Total</u>	
	#	P.R.*	#	P.R.	#	P.R.	#	P.R.
1st quarter	33,087	20.1	32,289	20.4	43,918	20.7	109,294	20.4
2nd quarter	40,129	23.2	37,955	22.8	53,397	23.7	131,481	23.3
Total	73,216	21.8	70,244	21.7	97,315	22.4	240,775	22.0

* Malaria Parasite Rate.

MONTHLY VARIATION OF POSITIVITY RATES OF
BLOOD SLIDE EXAMINATION
OUT PATIENT FOR ZANZIBAR TOWN, 1982

	INFANTS		2 - 9 Years		ADULTS	
	Total	Positive	Total	Positive	Total	Positive
January	387	112 (28.9)	853	321 (37.6)	3427	820 (23.9)
February	152	44 (28.9)	381	131 (34.4)	1031	242 (23.5)
March	185	63 (34.0)	339	126 (37.2)	908	255 (28.1)
April	126	39 (30.1)	253	81 (32.0)	756	186 (24.6)
May	104	38 (36.6)	279	96 (34.4)	856	240 (28.0)
June	149	77 (51.7)	352	190 (54.0)	866	386 (44.6)
July	33	16 (48.5)	118	73 (61.9)	385	176 (45.7)
August	26	5 (19.2)	156	79 (50.6)	408	158 (38.7)
September	157	71 (45.2)	503	291 (57.9)	1119	543 (48.5)
October	135	57 (42.2)	495	197 (39.8)	345	377 (44.6)
November	140	41 (29.3)	638	212 (33.2)	1511	378 (25.0)
December	179	72 (40.9)	450	193 (42.9)	1230	414 (33.7)

Note: Between brackets are shown positivity rates.

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ANNEX3 H:

SLIDE POSITIVITY RATES AMONG INFANTS, TODDLERS,
JUVENILES AND ADULTS ATTENDING OUT-PATIENT CLINIC
AT V.I. LENIN HOSPITAL, ZANZIBAR TOWN, SEPTEMBER, 1983

	<u>Examined</u>	<u>Positive</u>	<u>%</u>
Infants (0-11 months)	117	53	45.3
Toddlers (2-5 years)	170	84	49.4
Juveniles (6-9 ")	130	47	36.2
Total 2-9 years	300	133	44.3
Adults (15+)	1,014	427	42.1
GRAND TOTAL	1,642	717	43.7

ANNEX3 I:

GEOGRAPHIC ORIGIN OF FEVER CASES WITH SLIDE-
CONFIRMED MALARIA PRESENTING TO OUT-PATIENT CLINIC
AT V.I. LENIN HOSPITAL, ZANZIBAR TOWN.
(SELECTED DAYS, NOVEMBER, 1983)

<u>Date</u>	<u>Urban</u>		<u>Rural</u>		<u>Total</u>	
	<u>Cases</u>	<u>Pos. Slide (%)</u>	<u>Cases</u>	<u>Pos. Slide (%)</u>	<u>Case</u>	<u>Pos. Slide (%)</u>
1/11/83	49	18 (26.5)	8	3 (37.5)	57	16 (28.1)
3/11/83	18	4 (22.2)	2	2 (100)	20	6 (16.7)
4/11/83	16	10 (62.5)	2	2 (100)	18	12 (66.7)
TOTAL	83	27 (32.5)	12	7 (58.3)	95	34 (35.8)

Proportion of patients from Urban Zanzibar Town = 87.4%

Proportion of patients from rural areas = 12.6%

ANNEX 3 J a

BLOOD MASS SURVEYS, UNGUJA ISLAND: *****

DATE	REGION	DISTRICT	LOCALITY	AGE GROUP	No. EXAMINED	No. POSITIVE	P.R.
4.7.83	South	Central	Uzini	Infants 2.9 15 +	26 240 380	10 184 204	38.5 76.7 53.7
9.7.83	South	Central	Kibojje Mw. Shauri	Infants 2.9 15 +	26 226 312	22 184 144	84.6 81.4 46.2
9.7.83	South	Central	Kibojje Mkwajuni	Infants 2.9 15 +	16 182 232	12 156 130	75.0 85.7 56.0
10.7.83	South	Central	Total	Infants 2.9 15 +	68 684 924	44 524 478	64.7 80.9 51.7
20.6.83	South	South	Mzuri	Infants 2.9 15 +	7 91 134	1 60 65	14.3 65.9 48.5
30.6.83	South	South	Bwejuni	Infants 2.9 15 +	3 101 212	1 30 55	33.3 29.7 25.9
27.6.83	South	South	Munungoni	Infants 2.9 15 +	10 126 168	9 78 58	90.0 61.9 34.5
20.6.83	South	South	Ka. Jengwa/Makunduchi	Infants 2.9 15 +	12 87 118	5 50 50	41.7 57.5 42.4
0.6.83	South	South	Total	Infants 2.9 15 +	32 405 632	16 213 223	50.0 53.8 30.1

ANNEX 3 J b

BLOOD MASS SURVEYS, UNIGULA ISLAND 1983

DATE	REGION	DISTRICT	LOCALITY	AGE GROUP	No. EXAMINED	No. POSITIVE	P.R.
21.7.83	North	North A	Banda maji	Infants 2 - 9 15 ⁺	18 336 310	14 300 178	77.8 89.3 57.4
28.7.83	North	North A	Nungwi	Infants 2 - 9 15 ⁺	22 350 500	16 284 300	72.7 81.1 60.0
25.8.83	North	North A	Hkwa juni	Infants 2 - 9 15 ⁺	22 354 452	12 286 194	54.6 80.8 42.9
07.8.83	North	North A	Total	Infants 2 - 9 15 ⁺	62 1040 1262	42 870 672	67.7 83.7 53.3

ANNEX 3 J c

BLOOD PARASITE SURVEYS, UNGUJA ISLAND 1983.

DATE	REGION	DISTRICT	LOCALITY	AGE GROUP	No. EXAMINED	No. POSITIVE	P.R.
1.8.83	North	North B	Hwangapwani	Infants 2 - 9 15+	20 220 400	8 184 204	40.0 83.6 61.0
4.8.83	North	North B	Douge Hwangani	Infants 2 - 9 15+	38 264 350	30 228 208	79.0 86.4 59.4
08.83	North	North B	Total	Infants 2 - 9 15+	58 484 750	38 412 452	65.5 85.1 60.3
6.8.83				Infants	220	140	63.6
Note -				2 - 9	2577	2024	78.5
				15+	3568	1030	51.3
GRAND TOTAL UNGUJA ISLAND							
P.R. = PARASITE RATE							
INFANTS = 0 - 11 MONTHS							
2 - 9 = (years old) 15+ = adults.							

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ANNEX 3 K:

SUMMARIZED RESULTS OF SPLEEN SURVEYS CARRIED OUT IN SIX PRIMARY SCHOOLS, UNGUJA ISLAND (NOVEMBER, 1983)

REGION	SCHOOL NAME	AGE	No. EXAMINED	No. POSITIVE	S.R. ¹	A.E.S. ²
West.	Bwefum	6 - 9	61	31	50.8	2.0
	Kombeni	7	71	22	31.0	2.1
South	Dwejuu	6 - 9	65	15	23.1	1.7
	Unguja Ukau	7 - 9	58	22	37.9	1.9
North	Mahorata	6 - 9	65	35	53.9	1.8
	Pale	5 - 9	71	25	35.2	1.8
1.	SPLEEN RATE					
2.	AVERAGE ENLARGED SPLEEN					

ANNEX 3: L:

ZANZIBAR MALARIA CONTROL PROGRAM

SUMMARY OF FIELD EVALUATIONS OF ACD ACTIVITIES BY REGION
November 9-11, 1983

<u>Region</u>	<u>ACD Post/Place</u>	<u>Length of Service of Acclagent (years)</u>	<u>Average No. of Houses visited per day</u>	<u>Drug Treatment Schedule (Tabs of Chloroquine/day)</u>					<u>Quality of Slides</u>	<u>Supplies with Agent</u>
				<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>Total Tabs</u>		
<u>North</u>	Metenwe	10	40-50	4	2	2		8	Good	Yes
	Kivugnge	8	50	4	4	2		10	"	"
	Mahonda	11	58-60	4+2	2	2		10	"	"
	Pale	10	35-75	4	4	2		10		
<u>South</u>	Bwejuu	10	30-40	4+2	2	2		10	"	"
	Kikungi	20	40-50	4+2	2	2		10	"	"
<u>West</u>	Kilimani	8	35-78	4+2	2	2	2	12	Average-Poor	"
	Kiembesamaki	10	30-40	4+2	2	2	2	12	Poor	"
	Kombeni	6	15-30	4+2	2	2		10	"	"

ANNEX 3L:

REMARKS:

1. All ACD Agents were engaged in registration process.
2. All Agents reported attending July seminar on ACD for 3 days.
3. ACD Agents equipped with single service pricking needles.
4. All ACD Agents had uniform.
5. Agent looking at Apt. Complex at Kilimani. Trained in Nigeria - 3 months in 1980.
6. No ACD Agent had health education materials.

ANNEX 3M:

ZANZIBAR MALARIA CONTROL PROGRAM

SUMMARY OF FIELD EVALUATION OF P.C.D ACTIVITIES BY REGION

November 9-11, 1983

<u>Region</u>	<u>Health Center Location</u>	<u>Average OPD Reported</u>	<u>% OPD Reported to be Malaria</u>	<u>OCTOBER DATA (NO)</u>			<u>Treatment</u>		<u>Schedule (Tabs per day)</u>		
				<u>OPD</u>	<u>MAL/Fever</u>	<u>%</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>Total</u>
<u>West</u>	Bwefum	20-30	33%	359	62	17.2	4+2	2	2	2	12
	Kombeni	30	20%	301	83	27.6	4+2	4	4	4	18
	Bweni										
	(Tractor Factory)	20-25	75%	NOT AVAILABLE			4+2	2	2	2	12
	Kilimani (near apts)	30 new 35 - repeat	25%	293	183	62.5	4+2	2	2	2	12
<u>South</u>	Bwejuu	30-50	20%	431	90	20.1	4+2	2	2	2	12
	Unguja Ucuu	20-30	50%	416	152	36.5	4+2	2	2	2	12
	Matemwe	60 *	20%	362	88	24.4	4+2	2	2	2	12
	Nkokotoni			1,033	133	12.9	4+2	2			8
	Mahonda	50-60	20-25%	NOT AVAILABLE			4+2	2	2		10

* 30% repeats for drug.

ANNEX. 3 M:

REMARKS

1. No written MOH instruction on drug treatment was available anywhere.
2. Malaria training is required for MOH H.C. personnel.
3. Supplies of chloroquine appear regular and no shortages encountered .
4. Injectable chloroquine used 2-3 times per week.
5. Liquid chloroquine used widely on infants. Importance to shake not common.
6. There were several complaints on itching following chloroquine treatment.

ANNEX 3N:

W.H.O. GUIDELINES FOR THE TREATMENT OF ACUTE MALARIA.

CHLOROQUINE

For Adults: 1500 mg. base over 3 days (Total Dose)

Day 1 =	600 mg base
followed in 6 hours by	300 mg base
Day 2 =	300 mg base
Day 3 =	300 mg base

For Children: 25 mg base/kg body weight (Total Dose)

Day 1 =	10 mg base/kg
followed in 6 hours by	5 mg base/kg
Day 2 =	5 mg base/kg
Day 3 =	5 mg base/kg

Parenteral Use:

Chloroquine for parenteral use is usually supplied in ampoules of 200 mg/5ml. It is not recommended for use in ambulatory patients who are able to swallow oral preparations. Single parenteral doses should not exceed 5mg base/kg body weight, preferably administered by deep intramuscular injection. Great caution should be exercised when it is administered to young children; severe hypotension, cardiovascular collapse, and death have been observed.

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QUININE

For Adults: 1800 mg/day, usually in 3 divided doses
(i.e. 600 mg every 8 hours), for 3-7 days.

For Children: 10mg/kg body weight every 8 hours for 3-7 days.

For Parenteral Use:

Quinine sulfate tablets are very well absorbed when taken orally. For those patients too ill to take drugs by mouth, quinine is given at the above doses along with needed fluid replacement and supportive therapy, by slow intravenous drip, each dose usually diluted in at least 500 ml. of appropriate intravenous fluid. Intramuscular injections should be avoided, as they frequently lead to abscess formation.

Treatment with quinine should always be accompanied with, or followed by, another antimalarial (e.g. chloroquine, amodiaquine, tetracycline). Quinine alone, while a rapidly - acting blood schizonticide, should not be relied upon for radical cure.

TETRACYCLINE

For Adults: 250 mg by mouth, 4 times a day for 7 days.

For Children: 5 mg/kg by mouth, 4 times a day for 7 days.

Remarks:

Tetracycline is a slow-acting antimalarial, therefore it should rarely be given alone, nor need it be given by any route other than oral. Because the drug is deposited in growing teeth and bones, it should be

used with discretion in infants and young children, and in women after the 4th month of pregnancy.

PYRIMETHAMINE AND SULFADOXINE

For Adults:

Pyrimethamine 75 mg. and Sulfadoxine 1500 mg. in a single dose.

For Children:

Infants: Pyr. 8.25 mg. and Sulfa 125 mg.

1-3 yrs. Pyr. 12.5 mg. and Sulfa 250 mg.

4-11 yrs. Pyr. 25 mg. and Sulfa 500 mg.

11-14 yrs. Pyr. 50 mg. and Sulfa 1000 mg.

Remarks:

These drugs are rapidly absorbed from the gastrointestinal tract and there is little rationale for the use of parenteral preparations. This combination should not be used in patients with a history of allergy to sulfonamides, premature or newborn infants, or during the last trimester of pregnancy. As with other antimalarials, the use of this combination in sub-therapeutic doses (as has occurred in areas where there is little control over drug availability), probably has contributed to the emergence and spread of parasite drug resistance.

ANNEX 3 P : RESULTS OF W.H.O. STANDARD IN-VIVO FIELD TEST
FOR CHLOROQUINE 25mg/kg, MAKUNDUCHI, UNGUJA, AUGUST 1983.

<u>SCHOOL</u>	No. of Children	Mean Age (Years)	Responses		
			<u>S/R 1 (%)</u>	<u>R2 (%)</u>	<u>R3 (%)</u>
Makunduchi	40	7.7	5 (12.5)	33 (82.5)	2 (5.0)
Kusini	69	8.8	34 (49.3)	32 (46.4)	3 (4.3)
Kiongoni	53	8.0	22 (41.5)	25 (47.2)	6 (11.3)
TOTAL (mean)	162	(8.2)	61 (37.6)	90 (55.5)	11 (6.8)

Note: S = Sensitive
R = Resistant

Annex 4A

SUMMARY RESULTS OF SUSCEPTIBILITY TESTS TO INSECTICIDES CARRIED
OUT ON GAMBIA, 1983

Unguja Island (all Anopheles Gambiae (SL) adults)

Date of collection	District	Village	Vector species	Type of insecticide and concentration	Time of exposure	Control		Test	
						No. tested	Mortality %	No. affected	Mortality %
4.6.83	Town	Hyere	An.gambiae	DDT 4%	1h	8	12.5	2	30
24.6.83	Town	Kwa vaze	An.gambiae	DDT 4%	1h	30	0.0	4	63
01.6.83	North A	Zavia	An.gambiae	DDT 4%	1h	15	13.3	4	72
01.6.83	North A	Zavia	An.gambiae	Malathion 5%	1h	15	13.3	1	25
21.6.83	North A	Vivanda	An.gambiae	DDT 4%	1h	15	6.6	2	30
21.6.83	North A	Sinasara	An.gambiae	Malathion 5%	1h	15	0.0	1	15
21.5.83	North A	Mikarafumi	An.gambiae	DDT 4%	1h	15	13.3	4	72
31.5.83	North A	Mikarafumi	An.gambiae	DDT 4%	1h	19	15.8	3	44
30.5.83	North A	Mikarafumi	An.gambiae	DDT 4%	1h	10	10.0	2	34
24.6.83	North A	Mgali	An.gambiae	DDT 4%	1h	15	0.0	2	30
07.6.83	North B	Iwankombo	An.gambiae	DDT 4%	1h	30	3.3	4	63
13.6.83	North B	Pangatupa	An.gambiae	DDT 4%	1h	35	0.0	4	72
08.6.83	North B	Hichungu	An.gambiae	DDT 4%	1h	35	2.9	4	64
08.6.83	North B	Hichungu	An.gambiae	Malathion 5%	1h	16	0.0	1	16

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Annex 4A (continuation)

25.6.83	West	Birkani	An. Gambiae	DDT 4%	1h	31	0.0	4	62	41.9
25.6.83	West	Birkani	An. Gambiae	Halathion 5%	1h	15	0.0	1	15	100.0
25.6.83	West	Kalliani	An. Gambiae	DDT 4%	1h	30	6.6	4	61	73.7
11.6.83	West	Minondoni	An. Gambiae	DDT 4%	1h	37	0.0	4	65	58.5
11.6.83	West	Minondoni	An. Gambiae	Halathion 5%	1h	15	0.0	1	19	100.0
23.6.83	West	Kiechaku - Labundi	An. Gambiae	DDT 4%	1h	30	0.0	4	61	73.7
28.6.83	West	Kiechaku - Labundi	An. Gambiae	Halathion 5%	1h	15	0.0	1	15	100.0
02.7.83	West	Kama	An. Gambiae	DDT 4%	1h	15	0.0	2	31	70.9
01.7.83	Central	Ikwenbe - Kivete	An. Gambiae	DDT 4%	1h	15	0.0	2	30	20.0
29.6.83	Central	Hipolooni	An. Gambiae	DDT 4%	1h	30	3.3	4	61	58.8
27.06.83	Central	Ikallim Kombo	An. Gambiae	DDT 4%	1h	31	3.2	4	61	47.5
13.6.83	Central	Ikriwa	An. Gambiae	DDT 4%	1h	30	3.3	4	62	75.8
13.6.83	Central	Ikriwa	An. Gambiae	Halathion 5%	1h	19	0.0	1	18	100.0
06.6.83	Central	Ikwenbe Ikubwa	An. Gambiae	DDT 4%	1h	35	5.7	4	68	50.0
06.6.83	Central	Ikwenbe Ikubwa	An. Gambiae	Halathion 5%	1h	25	0.0	1	19	100.0

Spray Operations

SUMMARY OF RESIDUAL SPRAYING ACTIVITIES
WITH 4% DDT (1974-1980)

<u>Year</u>	<u>Houses Completely Sprayed</u>	<u>Houses Partially Sprayed</u>	<u>Houses not Sprayed</u>	<u>Coverage %</u>
<u>1974</u>				
Unguja	54,097	-	4,981	91.6
Pemba	37,738	-	9,449	79.9
<u>1975</u>				
Unguja	51,575	119	7,503	87.3
Pemba	27,526	23	25,561	45.8
<u>1976</u>				
Unguja	36,367	19	22,711	61.6
Pemba	20,497	49	26,690	43.4
<u>1977</u>				
Unguja	9,607	53	4,947	16.3
Pemba	20,107	63	2,208	42.6
<u>1978</u>				
Unguja	35,846	-	23,232	60.1
Pemba	14,090	-	32,097	29.9
<u>1979</u>				
Unguja	34,604	-	24,414	58.6
Pemba	15,325	-	31,862	32.5
<u>1980</u>				
Unguja	9,301	436	49,777	15.7
Pemba	1,123	94	46,064	2.4
<u>1981</u>				
Unguja	-	-	-	-
Pemba	-	-	-	-
<u>1982</u>				
Unguja	-	-	-	-
Pemba	-	-	-	-

<u>Year</u>	<u>No. of Houses Treated</u>	<u>Lavatory Pit Latrines</u>	<u>Drains</u>	<u>Year</u> <u>1980</u>	<u>No of Houses Treated</u>	<u>Drains</u>
<u>1974</u>						
Unguja	4,076	2,726	-	Unguja	2,163	547
Pemba	24,852	3,050	-	Pemba	17,834	406
<u>1975</u>				<u>1981</u>		
Unguja	34,055	246,434(?)	141	Unguja	10,275	2,049
Pemba	-	-	-	Pemba	-	-
<u>1976</u>				<u>1982</u>		
Unguja	32,154	118	54	Unguja	7,228	923
Pemba	-	-	-	Pemba	-	-
<u>1977</u>				<u>Note:</u> (1) Dursban was used from 1977 and Abate from 1979		
Unguja	13,011	7,316	5,128			
Pemba	-	-	-			
<u>1978</u>						
Unguja	3,323	2,097	720	1977	1,080	7,115
Pemba	-	-	-	1978	110	18,000
				1979	230	8,800
				1980	882 lts	6,143
				1981	272 lts	-
				1982	4,404	-
<u>1979</u>						
Unguja	5,543	2,454	516			
Pemba	4,222	1,241	407			
				<u>All amounts in Liters</u>		
				Malariaol	1 litre @ T.Shs. 9/-	
				Abate	1 " " " 12/-	
				Dursban	1 " " " 206/-	

ANNEX 6 A

	<u>Number</u>	
<u>*Program Supervisors</u>	<u>Actual</u>	<u>Proposed</u>
Senior laboratory technicians	2	2
Source reduction supervisors	-	4
Senior health inspectors	2	2
Regional Rural Health Assistants	5	5
District Rural Health Assistants	10	10
Spray Supervisors	-	10
Malaria Supervisors	12	17
Health Educators	1*	2
Assistant parasitologists	2	2
Microscopists	12	12
Cartographers	-	2
Entomology Assistants	3	5
Entomology aides	-	10
	<hr/>	<hr/>
Total	49	83

* The Health Educator is also the chief of the Health Education Unit of the Ministry of Health and Social Welfare has been attached temporarily to the project since October 1983.

ANNEX 6 B.SHORT-TERM TRAINING ACTIVITIES WITHIN ZANZIBARSeptember 1981 - October 1983

<u>Category</u>	<u>Total planned Participants in P.P.</u>	<u>Actual to date</u>	<u>Numbers FY 84</u>	<u>Scheduled FY 85</u>	<u>FY 86</u>
1. Microscopists	12	8	*	*	*
2. General seminar for supervisor staff	82	-	-	-	-
3. Basic Training for all technicians	249	-	-	-	-
4. In-service Training for all staff	433	49	24	25	27
5. Malaria supervisors and Agents	81	41	*	*	*
6. Source Reduction Personnel	49	-	3	-	-
7. Spray supervisors	10	-	42	*	*
8. Spraymen	60	-	250	*	*
9. Pump Mechanics	2	-	2	*	*
10. Government Officials	50	1	*	*	*
11. Balozi	7,000	-	-	-	-
12. School teachers	3,000	-	-	-	-
13. Rural Health Workers	300	-	-	-	-

* Training activities are planned for these years although actual numbers of participants in each group have not yet been determined.

ANNEX 6CPROPOSED U.S. AND 3RD COUNTRY TRAINING ACTIVITIESSeptember 1983 - October 1987

<u>Category</u>	<u>Total Participants Proposed</u>	<u>Actual to date</u>	<u>Numbers FY 84</u>	<u>Scheduled FY 85</u>	<u>FY86</u>
U.S. academic MPH Dr. PH	5	1	3	1	-
Academic M.Sc	4	-	2	1	1
U.S. Diploma in Epidemiology	6	-	2	2	2
U.S. short course	7	-	2	4	1
U.S.A. Study tour and workshop	16	-	7	3	6
Third Country Short Courses	36		7	12	17
International Conferences	5	2	1	2	-

ANNEX 6 D

<u>Category</u>	<u>Training Planned</u>	<u>Actual to date</u>	<u>Comments</u>
U.S. Academic MPH & Dr. PH	Five	* One	*Dr. O.J. Khatib MPH in 1983/84 Harvard Deputy Director Dr. PH - 1984-85 (Tulane University) Director ZMCP MPH 1985-86 John Hopkins University 2 - MPH Courses 1984-85
Academic MSc Britain/U.S.A.	Four	None	1 Epidemiology - 1984-85 2 M.Sc Par/Ent. 1985.86 3 M.Sc. Par/Ent 1986-87 4 M/MED Tropical Medicine 1984-85
Third Country Short Course	Thirty Six	None	1. Director - 1984 2. D/Director - 1984/85 3. Reg. Officers - 5 4. District Officers - 10 5. Administrative Officer - 5 6. Labor. technicians - 5 7. Health Educator - 2
U.S. Short Courses	Seven	None	1. OPER SPEC - Pemba) 1984 2. " " - Unguja) 3. ISL Officer - Pemba 4. " " - Unguja 5. Mbarouk Said 6. Health Educator Unguja and Pemba
U.S.A. Diploma in Epidemiology	Six	None	
Study Tours U.S.A. P. Workshops	Sixteen	None	1. Director - 1985 2. Deputy Director - 1984 3. (2) Gsl. Officers - 1984 (Pemba) 4. " " - 1985 (unguja) 5. Regional officers - (5) 1984/85/86 6. OPER Officer - Pemba 1985 7. " " - Unguja 1986
International Conferences	-	-	Director, Deputy Director and Senior Malariologist

	HEALTH	EDUCATION	PROGRAM	1984-1987
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Best Available Document

ANNEX F

AREAS OF COMMUNITY PARTICIPATION

COMMUNITY	Field Activities		Demonstra- tions		Mass-Media		Training	
	Larviciding Spraying	Campaigns			Radio TV	Drama	Seminar Workshops	
1. Public	x	x	x		x	x	x	-
2. Individuals	-	x	x		-	-	-	-
3. Teachers	x	x	x		x	x	x	x
4. Students	x	x	x		x	x	-	-
5. Pol. Leaders	-	x	x		x	x	x	x
6. J.K.U.	x	x	x		x	x	x	x
7. Inst. Cadres - Police/Army	x	x	x		x	x	x	x
- CQM Cadres	x	x	x		x	-	x	x
8. Health workers								

1. OBJECTIVES:

General:

1. To feed the public with general information concerning malaria as a disease and a public health problem, to emphasize about the malaria/project and its implementation in Zanzibar through mass media and other sources of communications during the whole project period and thereafter.

2. To train and participate in courses of instructions to different cadres leaders, and other personalities on malaria control programmes and activities for the purpose of fully involving them in the programmes.

3. To involve the community so that they support and participate fully in all malaria activities during the whole period and thereafter.

Specific:

1. The individuals make routine of cleaning their immediate surroundings and the public collectively through party or other sources of leadership be organised to clean the surroundings in their villages, towns, and other areas whenever necessary and during the campaigns.

2. The public to secure and make daily use of mosquito-proof means of nets in beds, suitable wire gauzes in windows, doors and other openings in their houses and premises.

3. The people to use properly the drugs given to them in hospitals, health centres, and clinics for the treatment of malaria according to dosage, time, and also have themselves properly checked during fevers of all types and report back to the hospitals, clinics, or health centres for results and advices.

4. The individuals and the public every now and then and specifically during the campaigns clean and drain to eliminate the breeding foci around their houses, premises and surroundings.

5. The people to participate and cooperate in the spraying programmes which will be organized and arranged at intervals.

ANNEX 6 GZANZIBAR MINISTRY OF HEALTH (MOH)QUARTERLY MALARIA CONTROL HEALTH EDUCATION PROGRAMMES OCTOBER - DECEMBER, 1983

1. T.V. & Radio Programmes	12.10.83 Panel discussion	26.10.83 Lecture	9.11.83 Drama	23.11.83 Lecture & Ngonjera	7.12.83 Lecture & Poetry	21.12.83 Panel discussion
2. Meetings:	14.10.83	21.10.83	25.10.83	31.10.83	7.11.83	11.11.83
	21.11.83	29.11.83	6.11.83	12.12.83	23.12.83	30.12.83
3. Library:	14.10.83	21.10.83	28.10.83	4.11.83	11.11.83	18.11.83
	2.12.83	16.12.83	23.12.83	30.12.83		25.11.83
4. Training:	Health/Med. workers.	Leaders	School teachers			
5. Exhibitions:						
6. Film shows:						

2. METHODS/STRATEGIES:2.1. Radio and TV Programmes:

- Lectures
- Panel discussions
- Drama
- Poetry/Ngonjera
- Spot announcements

Fortnightly
(to be weekly repeated)

- public
- patients
- individuals

2.2. Meetings:

- Lectures
- discussions
- debts

Almost daily

Almost every 3 days.

- CCM Branches
- Party affiliated organizations
- Schools and high institutions
- Sports clubs
- factories
- specific groups like police camps, armies, JKU; etc.
- public
- specific groups e.g. trainees

2.3. Visual Aids Production:

Almost weekly

- posters
- booklets and pamphlets
- photo pictures
- slides
- films
- flannel graphs
- models

2.4. Training/courses of instructions:

As often as possible

- lectures
- workshops
- seminars

- para medical and health staff
- leaders of the party like balozis, etc
- school students
- teachers in training and others
- public, etc.

2.5. Exhibitions:

When opportunities occur.

- national level
- local level
- others

2.6.	<u>Library:</u>	Once a week	- schools - teachers - others
2.7.	<u>Mobile film shows:</u> - rural areas - others		- public (rural areas) - factories - institutions/camps
2.8.	<u>Campaigns:</u> - community participation	Environmental sanitation campaigns	- public - CQM Branches level.

3. TOPICS TO BE COVERED:

- 3.1. Environmental sanitation
- 3.2. Mosquito-proof measures
- 3.3. larviciding
- 3.4. spraying
- 3.5. researches
- 3.6. treatment
- 3.7. other related subjects (by involving other Ministries concerned e.g. Ministry of Education etc.)

4. PARTICIPATION:

- 4.1. Medical and health officials and experts
- 4.2. Leaders - political and influentials
- 4.3. public
- 4.4. cultural groups
- 4.5. schools and institutions
- 4.6. patients
- 4.7. others e.g. U.W.W.

ANNEX 6 HHEALTH EDUCATION EQUIPMENTS, ACQUIRED BY PROJECT AS OF
(NOVEMBER 1983)

<u>Quantity</u>	<u>Commodity</u>
2	Ger-tetner Duplicating Machine
1 lot	Spare parts for duplicating machine
2	BUHL overhead projector
10	Spare bulbs for overhead projector
2	BUHL roll attachment
10	Sets of marking pens (8/set)
10	TDK CD-45 45 min cassette tapes
20	TDK-CD-60 60 min cassette tapes
10	TDK-CD-90 90 min cassette tapes
2	UHER 4000 open-reel tape recorder
2	Battery unit and recharger for UHER 4000
2	Nicad battery set
2	Carrying case for UHER 4000
2	Remote mike for UHER 4000
2	Canon model AL-1 camera body, with case
2	Canon 50 mm lens for AL-1
2	Canon 35 mm lens for AL-1, with case
2	Canon 50 mm macro lens for AL-1, with case
2	Canon 200mm telephoto lens for AL1 with case
2	Testrite copy stand with copy light set
6	Spare bulbs for above light set
2	Step-down transformer & plug adaptor
2	GRA-LAB model 300 timer
4	Weston S.S. darkroom dial thermometer
2	Arkay 18-C flat bed print dryer
2	Step-down transformer and plug adaptor
1 box	500 sheets Kodak Kodabromide F-2 paper 3 1/2" x 5"
1 box	500 sheets Kodak Kodabromide F-3 paper 3 1/2" x 5"
1 box	500 sheets Kodak Kodabromide F-4 paper 3 1/2" x 5"
1 box	100 sheets Kodak Kodabromide F-1 paper 8" x 10"
4 boxes	25 sheets Kodak Kodabromide F-2 paper 8"x 10"
4 box	25 sheets Kodak Kodabromide F-3 paper 8" x 10"

QuantityCommodity

1 box	25 sheets Kodak Kodabromide F-4 paper 8" x 10"
1 box	50 sheets Kodak Kodabromide F-1 paper 11" x 14"
1 box	50 sheets Kodak Kodabromide F-2 paper 11" x 14"
1 box	50 sheets Kodak Kodabromide F-3 paper 11" x 14"
1 box	50 sheets Kodak Kodabromide F-4 paper 11" x 14"
8	Kodak 36 exposure B&W film, 400 ASA
15	Kodak 20 exposure B&W film, 400 ASA
22	Kodak 36 exposure B&W film, 125 ASA
40	Kodak 20 exposure B&W film, 125 ASA
15	Kodak Ektachrome 36 exposure film/200 ASA
2	KIWI camera bag
25	One-hour length rools video tape
2	Olympia electric typewriters, 24" carriage, Model 65-C
2	Gasoline powered generator, #GA121M5-HJ
1 lot	spare parts for above generator
100	Reams 8 1/2" x 11" bond typing paper
250	Reams 8 1/2" x 14" photo copy paper
150	Reams 8 1/2" x 11" photo copy paper
10 dozen	Venus drawing pencils, 4B
10 dozen	Venus drawing pencils, 3B
10 "	" " " 2B
10 "	" " " B
10 "	" " " HB
10 "	" " " 3H
10 "	" " " 4H
4	Phillips 16-inch Oscillating air fan
2	Step-down transformer and adaptor plug
30	1/4" x 900' reels Scotch Dynarange 900 recording tape
2	Baseler condenser enlarger, model 23CII
2	Baseler lens kit no. 9170
4	Spare lamps for Beseler 23CII
2	Testrite 5 1/2" round safelight with bracket

ANNEX 6 H

<u>Quantity</u>	<u>Commodity</u>
2	Sets of 3 5-1/2" filters for safelight (red, amber, green)
2	Step-down transformer and adaptor plugs
2	Lots of 10, spare 15 watt lamps for safelights
2	Photo bell timer, hand-wound
2	Sets of 3, Cesco-Lite developing trays
2	Cesco stainless steel developing tank
6	35 mm reels for film developing tanks
10	Telsar 1-gal. light-proof storage bottles
	Acculight light box
2	Spare bulbs for light box
2	Franzus adaptors for light box
2	Patterson 22 oz measuring pourers
2	Clipex film drying clips (pack of 10)
2	Premier PMAE11, 11" x 14" paper easel
10	Thongs
2 Box	1-gallon dry packs of Kodak D-76 film developer (10/box)
2 "	1-gallon dry packs of Kodak Dektol paper developer (10/box)
2 "	1-gallon dry packs of Kodak fixer (10/box)
2	Vivitar 283 flash unit
2	NC-3 rechargeable batteries for Vivitar
2	Model Charge 15 220 volt battery recharger for Vivitar 283
5	Remington manual typewriter, 15" carriage
150	Reams 8 1/2" x 11" photo copy paper
50	Reams 8 1/2" x 14" photo copy paper
4 Box	Lamps and lamp shades

EDUCATIONAL/PROMOTIONAL RESPONSIBILITIES

IN THE

MALARIA PROJECT

The Director, and the coordinating or executive committee where appropriate have the following educational/promotional responsibilities.

1. To obtain and maintain the backing of central government.
2. To obtain and maintain the interest and support of key individuals outside the Ministry of Health.
3. To obtain and maintain the interest and support of health service personnel.
4. To obtain and maintain public support for the programme.
5. To supervise and evaluate the work of the staff doing education concerning malaria.

1. OBTAINING THE BACKING OF THE CENTRAL GOVERNMENT

It is important to obtain a publicly stated policy document, emphasising the Government's intentions, either as part of a national health plan or separately as appropriate.

All the Ministries concerned should have a clear idea of the programme. The following Government administrative structures, or their equivalent, should be contacted at the highest level.

Cabinet.

Treasury, Ministry of Finance, Bureau of the budget.

Ministry of Home Affairs (Internal Affairs).

Ministry of Education.

Ministry of social welfare.

Ministry of Information.

Ministry of Agriculture.

Ministry of Planning, Ministry of National Economic Development.

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Government Ministers are busy people with many demands on their time. To be sure that they have every opportunity to understand the programme, it is suggested.

- That the Minister of Health give an explanation of the programme at a Cabinet meeting, emphasizing its importance and seeking the Cabinet's support.
- That he follow this up with an explanatory letter to his fellow Ministers enclosing ^{the} information and publicity material about the programme and again seeking their support.
- That a personal interview be arranged with individual Ministers by the Minister of Health. He may be accompanied by the Director, Malaria, by some other senior health official with responsibility for the programme, or by a member of a coordinating committee.

2. OBTAINING AND MAINTAINING THE INTEREST AND SUPPORT OF KEY INDIVIDUALS.

These include: Political leaders, including other leaders of budget groups.
Principals of schools and colleges and other health orientated institutions.
Leaders in the industrial and commercial sectors.
Trade union leaders.
Headmasters.
Religious leaders
Leaders in the mass media field.
Heads of voluntary organisations, e.g.
Pioneers, women union, wazazi, youth wing.

These people should be written to and visited as outlined for Government officials above.

It is often advisable to precede the visit with an explanatory letter which:

- Seeks their support.
- Encloses information/publicity material about the malaria programme, including the official policy statement.
- Advises them that an interview will follow.

Getting the interest and support of key individuals in the backing of central Government, is of great importance and a major responsibility of the director. He may seek the assistance of members of his coordinating committee.

The health professionals (Doctors, nurses, sanitarians, medical assistants, etc) are best reached.

- by lecture/discussions as part of the normal activities of the professional bodies to which they belong.
- Through, their professional/technical journals, etc.
- Through materials published by WHO.
- By personal visits to inform them about the programme and its achievements and problems.

The above groups and other appropriate Ministries should be asked to encourage their staff to support, and where possible participate in, the programme. For example by:-

- Giving the public information about the programme.
- Setting an example by encouraging anti-malaria activities at institutions responsible to or allied with the Ministry.

Best Available Document

SCHOOLTEACHERS

A special effort should be made to get the Ministry of Education to encourage schoolteachers to co-operate with the anti-malaria activities by

- Taking an active part in school anti-malaria activities. For example, by :-
 - Participating in the organization of anti-malaria activities in their areas and collaborating with the malaria officers at their areas.
- Explaining about malaria during their teaching and stressing its value. Supporting the programme during contact with parents and in the community generally.

In order to do the above, schoolteachers should be informed and receive training on the anti-malaria activities.

The Minister of Health should report back periodically to the Ministers mentioned above on the progress of the anti-malaria programme so as to reinforce their support and participation.

OBTAINING AND MAINTAINING THE INTEREST AND SUPPORT OF LEADERS ✓
AND THE PEOPLE.

This involves:-

- Staff training.
- Communication.

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STAFF TRAINING FOR HEALTH EDUCATION

This includes training of new staff and reorientation and training of existing staff. At central level, emphasis will be placed first on training or retraining.

- Headquarters staff, eg. field development officers and operations officer, etc.
- The senior and intermediate level supervisory staff at regional/district level.
- Training should be planned and organized with the help of an experienced training officer and a health educator who have demonstrated their effectiveness in field conditions.

They should be familiar with the health centres and their work and visit them regularly.

A syllabus and timetable will have to be prepared for overall training and the health education component should follow the same principles as for training generally. That is:-

- The course content should be directly related to the needs of the areas in which the students will be working.
- Participants should not be given facts and technical knowledge beyond that required for them to carry out their part in the programme, but enough to be able to answer intelligent questions from the public.

- questions from the participants should be answered.
- Priority should be given to staff who will actually be involved in the programme.
- The course should be held as close as possible to the date when the staff will have to begin their education/information activities.

Decisions have to be made on:-

- Educational objectives.
- Course curriculum.
- Training methods.
- Duration of the course.

EDUCATIONAL OBJECTIVES

The main objectives of training in health education would be:-

- To produce an interest in health education in the staff so that they can demonstrate in practice that they, understand the principles and procedures involved in the health education component of anti-malaria activities.
- To enable the health workers to incorporate effective malaria education in their daily work.
- To increase the ability of the health workers to communicate with individuals, families, community groups, and the general public.
- To produce better individual efforts and better teamwork with more effective health education resulting in higher coverage and reduction of diseases.

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- To enable the health workers to continually evaluate the educational aspects of their anti-malaria activities.

COURSE CURRICULUM

The following topics should be considered for inclusion in the training programme.

- General orientation to the malaria programme - the contribution of the individual health worker to the total effort.
- Health education opportunities to promote malaria in the work of the personnel being trained.
- How people learn, and the principal factors which influence and contribute to that learning.
- Methods, skills and techniques used in health education.
- Planning, preparation, pre-testing, selection, production, use and evaluation of audio-visual materials in health education with special reference to anti-malaria work.
- How to answer difficult questions and erroneous opinions.
- Principles and techniques of evaluation and research.
- Practical work by the trainee demonstrating the above abilities.
- At the end of the course, each participant should be satisfied that the objectives outlined above have been achieved in his particular case and be able to give a clear account of his health education responsibilities to the community and also to demonstrate in practice to himself and his supervisor that he has the skills to carry them out.

TRAINING METHODS

These should be related to the procedures used in the programme and so include an appropriate mixture of:-

- Classroom instruction
- Demonstration, discussion and role planning.
- Field training, including the health education aspects of:-
 - = A health centre malaria clinic.
 - = ACD and home PCD visits.
 - = Community participation.
 - = Programme evaluation.

DURATION OF THE COURSE

The length of training reorientation courses will vary from a few days to a week or more. This, and the content of the courses, will depend upon:-

- Staff attitude towards the malaria programme and their acceptance of its need and its importance.
- The staff's present knowledge and practical ability to carry out correctly the malaria procedures to be undertaken.
- Staff experience and ability in carrying out home visiting, recording of interviews and community surveys and of working with community groups, including village groups.

REFRESHER COURSES

Refresher courses are necessary:-

- To maintain staff interest and morale.
- To encourage resourcefulness.
- To keep staff up-to-date.
- To correct any mistakes in procedure that may have developed.
- For retraining when there is some change in methodology or a new technique is introduced.
- For feedback of staff attitude and problems to supervisors and teachers.

Sometimes a refresher course can serve several of these purposes.

A refresher course must:-

- Be based on the malaria programme.
- Have a clearly defined curriculum circulated well in advance.
- Give participants opportunity to undertake field work and to cooperate together for several days to identify joint problems and to develop and test joint solutions.

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COMMUNICATION

Staff, especially field staff, must be kept in close touch with programme activities. This can be done by:-

- Having staff meetings where staff can be given information and be invited to comments, make suggestions and discuss their problems.
- Bulletins/information sheets.

STAFF MEETINGS

These should:-

- Be held in official time.
- Be held regularly, and not less frequently than every three months.
- Be held on a day selected well in advance and on which no anti-malaria activities are planned.
- Be held at a central point, but not necessarily always at the same place.
- Have the agenda circulated at least a week in advance.
- Have the agenda based on problems related to the malaria clearly and briefly outlining it:-
 - = Achievement of some targets in certain villages.
 - = Excessive use of drugs in all clinics.
 - = An outbreak of malaria cases in some villages.
- Be used to identify and discuss joint problems and reach joint decisions on their solution. (Staff members must be given every opportunity to ask questions and to join fully in discussion).
- Be used to reassure staff that their colleagues at National level are interested in them and their work.
- Before ending the meeting, have decisions made and written down regarding.
 - = A summary of conclusions reached.
 - = What activities are to be carried out as a result of these conclusions by whom and by when.

Bulletins/Information sheets

These should cover headquarters and the field and include:-

- Feedback of operational achievements.
- Feedback on problems met and, where possible, how they have been solved.
- Policy/plan changes.
- Staff matters including staff changes.
- ~~Health education methods, techniques and materials.~~
- International news about malaria.

The length of bulletin/information sheets can vary but they should be produced regularly and preferably at least four times a year.

Feedback of Information.

Staff meetings and bulletin/information sheets are both means of feeding back information to staff in the programme, including activities at headquarters and in the field, requirements, problems met, and where possible, how they were solved.

It is equally important that national headquarters be kept informed on Regional and District activities, requirements, etc, if they are to serve the regions well. In particular they must be told of:-

- Any modifications to the national malaria plan that it has been necessary or logical to make at regional level.
- Problems that have occurred in the regional/district malaria programme and, where possible, the solutions that were found to them.

This also assists them with the evaluation of the promotional and public relations aspects of the malaria programme as well as being useful for improving other aspects of service performance.

OBTAINING AND MAINTAINING PUBLIC SUPPORT FOR THE PROGRAM

The programme Director should have the help of an education/information officer in order to prepare a public relations and public information programme. As a health education unit is existing, it may provide this service.

The purpose will be to involve the public at all levels so that they will be informed of the programme, accept it and assume some responsibility to see that it is carried out.

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To gain public acceptance and support, the national and regional publicity campaign should:-

- Be planned with care and well in advance - say six months of the date on which it is to begin.
- Be planned together with the Ministry of Information and the health education unit of the Ministry of Health.
- Have messages prepared from Nationally respected or venerated people such as the Head of State, the Prime Minister, Minister of Health.
- Have pre-campaign meetings to inform politicians, journalists, health staff and the staff of related Ministries of the plan, e.g. Education, Welfare, Nursing school etc.
- Have public information materials prepared well in advance, e.g. press releases, films, television and radio announcements and programmes, slogans, and possibly an insignia to identify the malaria programme.
- Have all information materials pretested to be sure that they are accurate and are easily understood and convey the message that is intended.

(This pretesting should be carried out with a representative sample of the public for whom the materials are intended).

- Be closely linked with the programme's activities and progress by region and district in order to avoid any risk of creating a demand for malaria that cannot yet be met even some populations and their leaders.

It is important that this initial effort is followed up so that the public in the target areas of the country is systematically educated and regularly informed regarding:-

- The purpose of the malaria programme and numbers of illness and deaths that could be prevented with full public co-operation.
- The methods being used.
- The age groups that are the target and why.
- The consequences in terms of the expected reduction in disease and of possible reactions.
- The cost of the Government to control malaria.
- Their own role as participants in the programme.

Systematic use should be made of as many as possible of the channels of communication available.

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Full use should be made of radio, and television services. Slide shows, cinema vans and local methods of communication such as puppet plays and shadow shows may be appropriate and notices and posters can be displayed in buses, at markets and other places where people meet together.

In planning and carrying out the National education/information activities, everything possible should be done to discover and anticipate factors that could damage the malaria programme. For example:-

- Rumours or stories that the Malaria staff are not hardworking corrupt or untruthful.
- Exaggeration of incidents or mishaps that have occurred during the campaign or elsewhere.
- Long waiting times, or people turned away without knowing why.
- Creating a demand for certain activities where it cannot yet be met.
- Certain anti-malaria are non-effective etc. rumours, stories, exaggerations, etc, can sometimes be anticipated from past experience or from experience of other countries. They should be dealt with promptly, and with honesty and sincerity, preferably, the explanation should be given by someone who is widely accepted and trusted. It should:-
 - Give the facts clearly and accurately.
 - Where possible, support the facts with experience either locally or from elsewhere.
 - Reach the same people who were influenced by the rumours, stories or exaggerations.
 - If a mistake has been made or certain drug was really found to be potentially non-effective, this should be frankly admitted. The steps taken to see that it does not occur again should be carefully explained.
 - Describe the mechanism by which further complaints, if they occur, can be promptly reported and acted upon.

PUBLIC MEETINGS

A major effort should be put into community meetings/discussions to be organized at all levels of the programme.

These meetings can be for general public or for special groups of the public such as councilmembers. Different community groups have not only different interests but each likes to be contacted, asked for its assistance and addressed in its own way; success comes from getting close to the interests and preferred ways of each group.

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The objectives will be increase public knowledge and awareness of :-

- Anti-malaria campaign/activities, what it can do, how it works, its benefits ~~and~~ the risks of not having it.
- The coming programme and why a high level of coverage is important.

These meetings can result in some individuals and group becoming personally interested and involved in the programme.

The programme director, one of his assistants, or a supervisor will often have to be the principal speaker or the discussion leader. The audience should be encouraged to participate and to bring up their problems and ask questions.

These meetings should be carefully planned and the following points should be kept in mind.

- The meeting should preferably be organized in a traditional place for public meetings.
- Good publicity to ensure that the people know that the meeting is to be held, where, when and how long it is expected to last.
- The meeting place should be the right size - not too big or too small, with enough seats and the seating as comfortable as can be arranged.
- If visual aids are to be used, make sure before hand that all the necessary equipment is provided and is in working order, e.g. projectors, extension cords, chalk boards, flip charts etc.
- That no representatives of newspapers, radio, television should be invited.

Meetings/discussions should also be held periodically in order to:-

- Keep the public interest and up-to-date.
- Report progress, achievements, failures and problems.
- Deal with any rumours or misunderstandings they may have arisen.
- Meetings/discussions can also be held after each round of the programme to announce results and to ask for even greater efforts for the next round. The results should also be publicized, e.g. in newspapers and by posters and notices etc.

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Staff Supervision

In our programme regional/district supervisors will be required. Such supervisors must visit the centres regularly and:-

- Assist staff by discussing their work and the results they are getting, including the results of any independent assessments, and by making suggestions where improvements are needed in anti-malaria activities generally and specifically in health education.
- Promote the adoption of good practices used successfully in other health centres.

A checklist of health education activities for a supervisor visiting a health centre might include.

- (1) Relationships with the Community were people well informed about the time and place of any activities (anti-malaria)

Are reception facilities satisfactory?

Are staff courteous?

Do people appear to be "athome"/comfortable in the clinic?

Do the people understand:-

= Their role in anti-malaria activities.

- Is there enough time given to educating the people about malaria?

- Do people have difficulty getting to the clinic?

- (2) Staff relationships

- Are staff working as a team?

- Are staff meetings held regularly, and how often?

- Is in-service training carried out and is it satisfactory.

= For existing staff?

= For new staff?

- (3) Health education activities

- Can all staff

= Describe their health education responsibilities?

= Carry them out?

- Are all the important points about malaria being covered?

- Are points the patients consider important being covered?

- Are group education sessions being held at which the people attending can participate, bring up their problems and ask questions.

- Are records being kept of health education activities and of their successes or failures?

- Are evaluation results and local data such as KAP surveys used for modifying the health education activities?

What audio visual media being used?

- Do they convey a useful message?
- Are they understood by the people?

Jean/sr:

~~12th October, 1993~~

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ZANZIBAR MALARIA CONTROL PROGRAM

STAFFING PATTERN

<u>No. of Personnel</u>	<u>FISCAL YEAR</u>				Projected		
	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>
A. Permanent	134	136	139	151	(151+13) 164	170	170
B. Temporary							
(Daily paid)	-	23	46	55	150 Agents	150	150
					250 spray-men	250	250
TOTAL	<u>134</u>	<u>159</u>	<u>185</u>	<u>206</u>	<u>564</u>	<u>570</u>	<u>570</u>

ANNEX 7 A:

ZANZIBAR MALARIA PROJECT

VEHICLE LIST

Project Headquarters

On hand

On order

Type:

Land-Rovers, station wagon	3	
Isuzu pick-up $\frac{3}{4}$ ton	3	
Chevrolet pick-up truck $\frac{3}{4}$ ton	1	
Toyota van	2	
Isuzu truck, 3 ton	1	2
Isuzu truck, pick-up 4 WD	-	2

Mnruia Island Office

Land-Rover station wagon	4	
Bejaj Motor scooters	-	12

Pemba Island

Land-Rover, station wagon	3	
Isuzu truck, 3 ton	1	
Motorcycles, Honda 110		3

Total

13

24

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